999732002 - 03/2026
en-GB

Formwork & Scaffolding.
We make it work.

Large-area formwork Top 50

User Information

Instructions for assembly and use (Method statement)

Contents

Introduction

Elementary safety warnings

User target groups

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

Hazard assessment

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

Remarks on this booklet

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

Planning

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

Regulations; industrial safety

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

Rules applying during all phases of the assignment

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

Assembly

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

Closing the formwork

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

Pouring

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

Stripping the formwork

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

Transporting, stacking and storing

- Observe all country-specific regulations applying to the handling of formwork and scaffolding. For system formwork the Doka slinging means stated in this booklet must be used – this is a mandatory requirement.
  If the type of sling is not specified in this document, the customer must use slinging means that are suitable for the application envisaged and that comply with the regulations.
- When lifting, always make sure that the unit to be lifted and its individual parts can absorb the forces that occur.
- Remove loose parts or secure them so that they cannot slip out of position and drop.
- When lifting formwork or formwork accessories with a crane, no persons must be carried along, e.g. on working platforms or in multi-trip packaging.
- All components must be stored safely, following all the special Doka instructions given in the relevant sections of this document!

Maintenance

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

Miscellaneous

The weights as stated are averages for new material; actual weights can differ, depending on material tolerances. Dirt accretions, moisture saturation, etc. can also affect weight.
We reserve the right to make alterations in the interests of technical progress.

Eurocodes at Doka

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

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

Allowance has been made for the following partial factors:

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

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

Symbols used

The following symbols are used in this document:

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

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

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

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

Instruction
Indicates that actions have to be performed by the user.

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

Tip
Points out useful practical tips.

Reference
Cross-references other documents.

Intended use

The Large-area formwork Top 50 is a highly versatile formwork system for producing structures in cast-in-place concrete construction in residential buildings (walls, foundations, shafts, columns) and infrastructure construction (bridges, tunnels). The Large-area formwork Top 50 is designed for setting up using a crane.

Boundary conditions: project-specific

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

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

System overview

Doka large-area formwork Top 50 - for any shape and any load

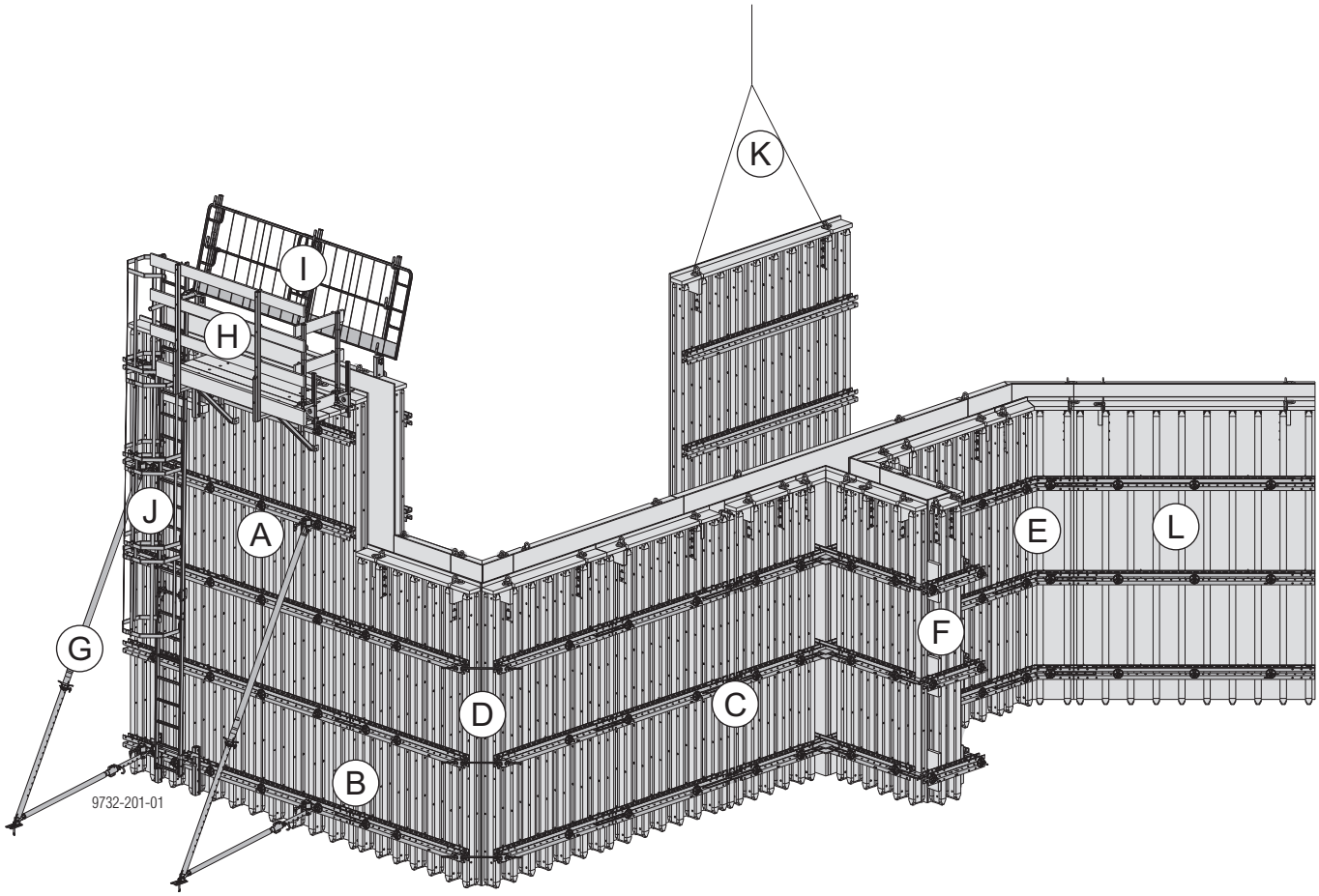
Doka large-area formwork Top 50 is designed to be tailored to many very diverse types of task - so it gives you ideal scope for adapting the shapes and sizes of the elements to suit your structure.

The element size-grid and tie-hole pattern provide the adaptability needed to accommodate architectural demands. The large-area elements and exact joins make for a perfect joint pattern.

You can choose whichever form-face material best meets your requirements - e.g. for smooth fair-faced concrete, wood-textured surfaces, intensive re-use etc.

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

Doka will plan the most economical solution for you. Also, having your formwork pre-assembled by the Doka Pre-assembly Service saves time and space on site.



	Section:
A	Tie rod system
B	Inter-panel connections
C	Length adjustment using closures
D	90 degree corners
E	Acute & obtuse-angled corners
F	Stop-end formwork
G	Plumbing accessories
H	Pouring platforms with single brackets
I	Opposing guardrail
J	Ladder system
K	Lifting by crane
L	Element assembly

Wall formwork

Instructions for assembly and use (Method statement)

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

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

Preconditions for use:

Platforms and all accessories must only be mounted to the element when this is face-down on the ground.

It must be possible for all formwork set-up, pouring and stripping operations to be carried out from safe workplaces.

Pre-assembly

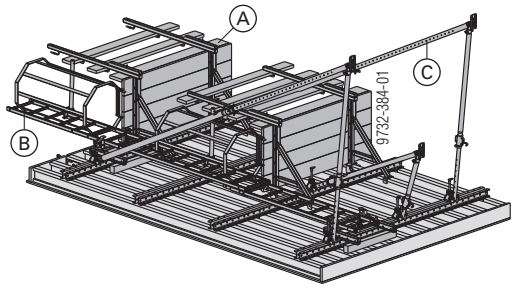
➤ Pre-assemble the formwork elements face-down on a prepared flat area (see section Element assembly).

The professionals from the Doka Pre-assembly Service plan and assemble **ready-to-use and custom formworks** exactly to your specifications.

➤ Mount platforms to the formwork element while it is laid flat (see section Pouring platforms with single brackets).

➤ Mount the ladder system to the face-down formwork element (see section Ladder system).

➤ Mount panel struts to the formwork panel while it is laid flat (see section Plumbing accessories).



A	Platform
B	Access system
C	Panel strut

Closing the formwork

➤ Attach the lifting chains to the lifting brackets provided (see section Lifting by crane).

Permissible working load limit:
1300 kg per lifting bracket

➤ Pick up the element by crane.

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

➤ Fly the element to its new location.

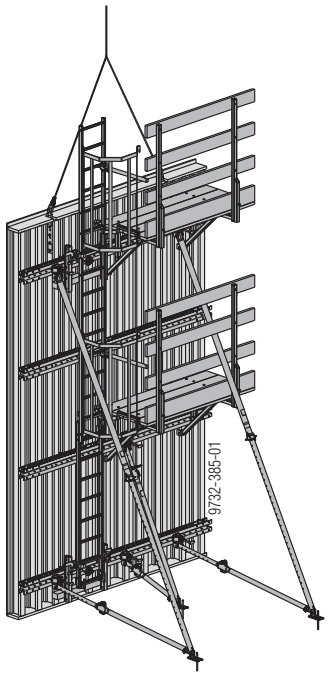
CAUTION
Never use a sledge hammer to plumb and align the panels!

This would damage the elements.

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

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

➤ Mount the top guardrail board.



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

WARNING
There is not yet a counter railing on the formwork!

Danger to life from fatal falls.

➤ Use a personal fall-arrest system (e.g. safety harness)
or
mount a counter railing to the gang-form while this is still being pre-assembled in a flat position.

➤ Detach the element from the crane.

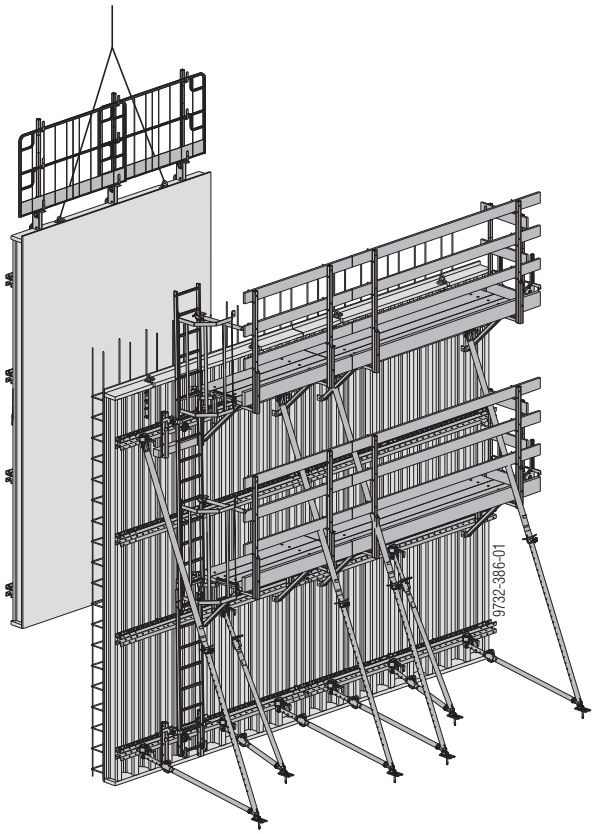
➤ Continue lining up formwork elements in this way, and link them together (see section Inter-panel connections).

Erecting the opposing formwork:

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

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

➤ Lift the opposing formwork by crane to its next location.



➤ Working from the ground, insert the bottom rows of form ties (see section Tie rod system).

WARNING

There is not yet a counter railing on the formwork!

Danger to life from fatal falls.

➤ Use a personal fall-arrest system (e.g. safety harness).

Before disconnecting from the crane:

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

➤ Detach the element from the crane.

➤ Insert the remaining form ties. These form-tie points can be reached from the platforms.

➤ Continue lining up formwork elements in this way, and link them together (see section Inter-panel connections).

Pouring

NOTICE

Do not exceed the maximum permissible rate of placing.

Large-area formwork Top 50:

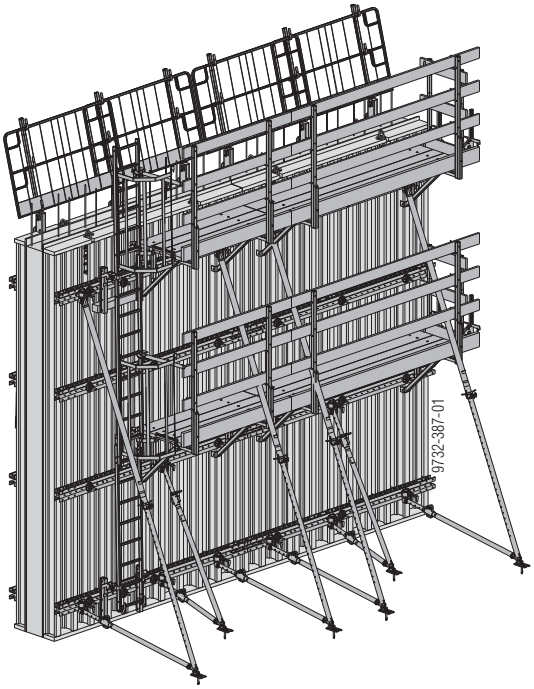
Permitted fresh-concrete pressure: See section Top 50 elements and project plan.

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

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

➤ Pour the concrete.

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



Stripping the formwork

NOTICE

➤ Comply with the stipulated stripping times.

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

Begin work on stripping the formwork on the opposing formwork:

➤ Undo the connectors to the adjacent elements.

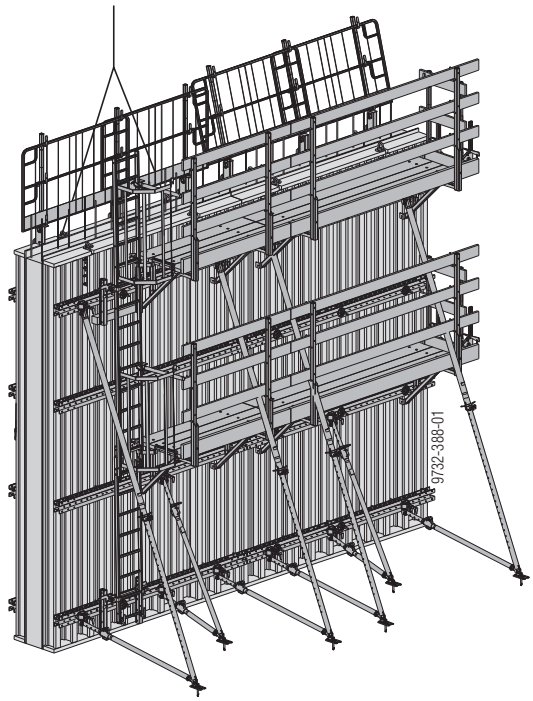
WARNING

➤ There must be at least as many form ties left in place as are needed to keep the element safely in the upright.

➤ Take out the form ties from the top rows of ties. These form-tie points can be reached from the platforms.

➤ Attach the element (incl. platforms) to the crane.

➤ Working from the floor, remove the bottom rows of form ties.



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 an aligning tool to detach the formwork from the concrete.

➤ Lift the element away and to its next location, or place it face-down for intermediate storage.

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

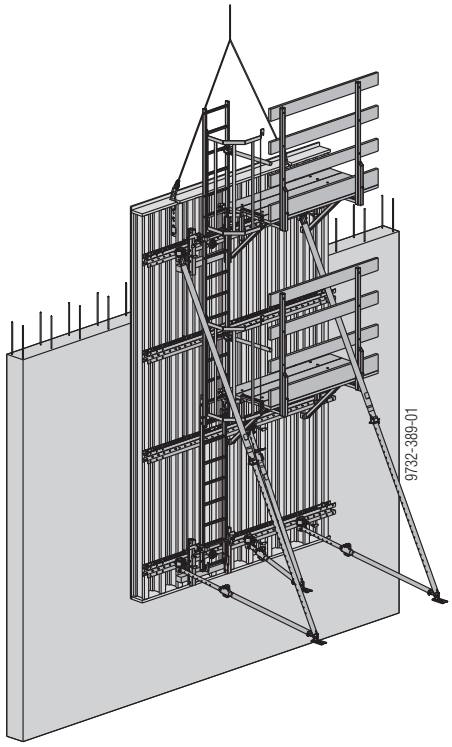
WARNING

There is not yet a counter railing on the formwork!

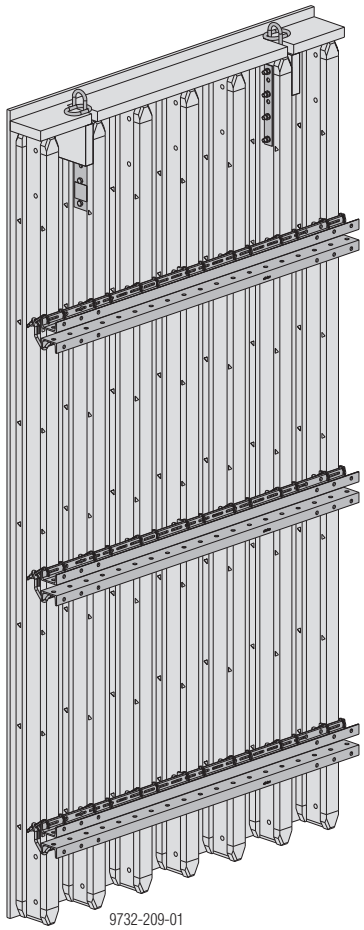
Danger to life from fatal falls.

➤ Use a personal fall-arrest system (e.g. safety harness).

➤ Where the element has panel struts attached to it, first attach this element to the crane, and only then detach the floor anchorages of the panel struts.



Top 50 element in detail



Form-facing

- No restrictions on what form-ply you choose - e.g. for smooth fair-faced concrete, wood-textured surfaces, repetitive re-use etc.
- The sheets are quick and easy to change
- Custom versions possible with profiled timber formers, open formwork and tongue-and-groove formwork

Follow the directions in the 'Formwork sheeting' User Information booklet!

Steel walings (multipurpose walings)

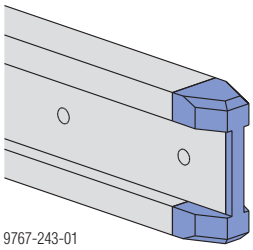
- hold the Doka H 20 beams in place and give the element rigidity
- sustain the forces from the form-ties
- make the elements easy to join, using plates and connecting pins

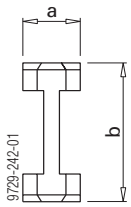
Tie-holes

can be located anywhere along the middle of the waling between the Doka beams

Doka beam H20 top

Innovative end-reinforcement:
- reduces damage to the ends of the beams
- greatly lengthens the service life





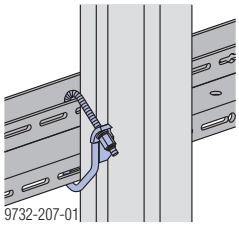
a ... 8 cm
b ... 20 cm

Follow the directions in the 'Timber formwork beams' User Information booklet!

The Doka beam XT20 can be used instead of the Doka beam H20 (see section Structural design).

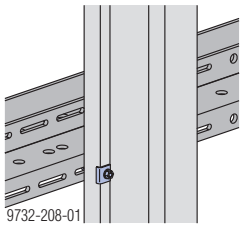
Fastening the beams

Flange clamp H20



- Where more frequent alterations are needed
- Can be mounted anywhere on the waling

Beam screw

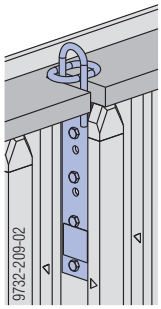


- For bolting the Doka beams directly onto the walings
- Can be mounted anywhere on the waling

For alternative ways of fixing the Doka beams, see section Element assembly.

Crane slinging

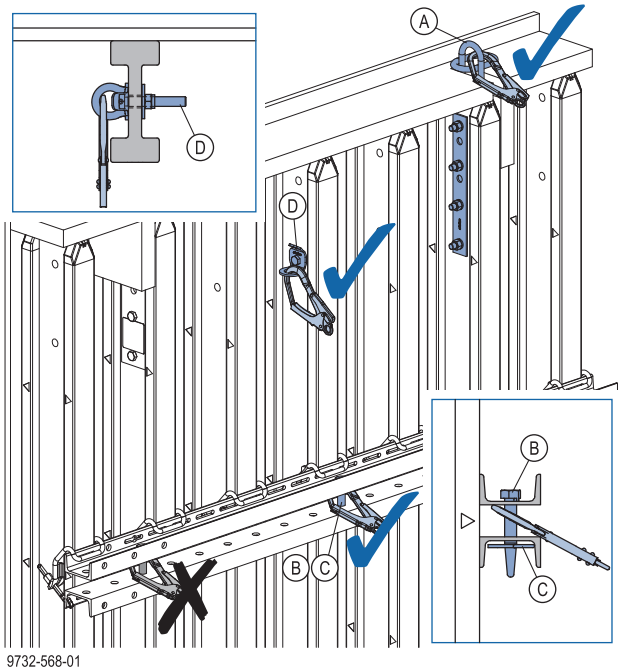
- by mounting a lifting bracket and a top plank (pressure bracing). See section Element assembly.



Anchorage points for personal fall arrest systems (PFAS)

WARNING

- Make sure that the attachment point is at or above the required minimum height, as otherwise there will not be sufficient room to arrest a fall.
- The Top 50 element must consist of at least 4 H20 beams.
- Make sure that the steel walings are adequately secured with flange clamps.
- Install the attachment point at a distance of at least two H20 beams in from the edge of the element.
- Do not install Tie-off set PPE type A in the top hole of the Doka beam.

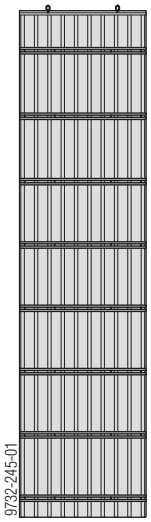


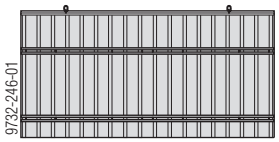
A	Lifting bracket
B	Connecting pin 10cm
C	Spring cotter 5mm
D	Tie-off set PPE type A (tested according to EN 795 (type A))

Flexibility

Size

Top 50 elements can be assembled in **widths of up to 6 m** and in **heights of up to 12 m**.



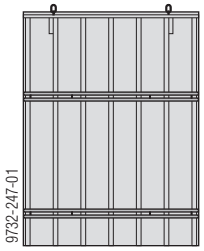


Pressure of fresh concrete

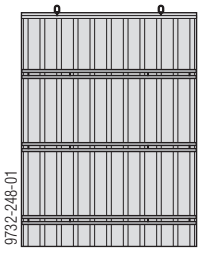
Depending on the **concrete pressure** required, the Doka beams and the walings are spaced closer together or further apart. This ensures optimum formwork design and the greatest economy of materials.

For more information on structural design of Top 50 elements, see section Structural design.

e.g. fresh-concrete pressure
40 kN/m²



e.g. fresh-concrete pressure
90 kN/m²



Surface

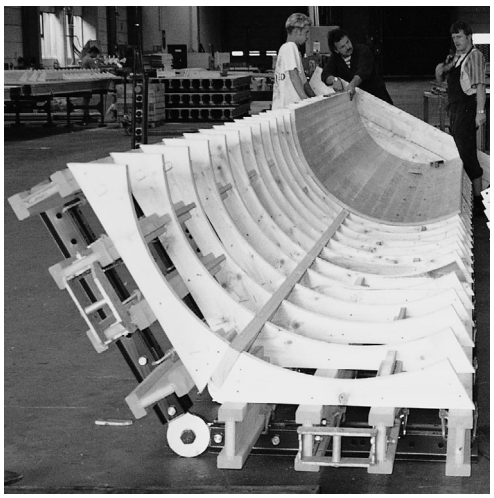
Any type of form-ply can be used, as required:

- Doka formwork sheets 3-SO
- Dokaplex formwork sheets
- Xlife sheets
- Xface sheets
- Tongue-and-groove board formwork etc.

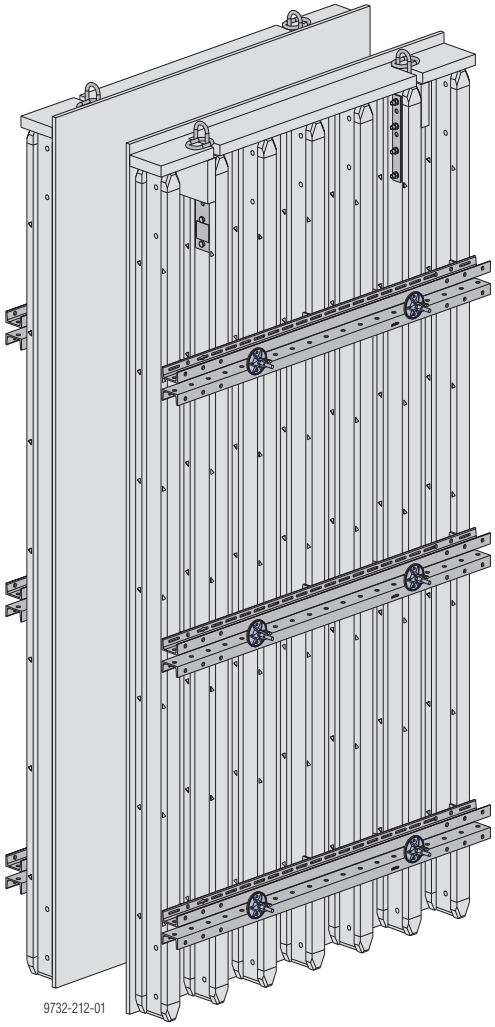
The tie-hole pattern and the element size-grid are easily adapted to suit architectural demands. The large-area elements and exact joins deliver perfect joint patterns.

Shape

Creating complex concrete shapes demands a high degree of formwork flexibility. On the large-area formwork Top 50, this is achieved by the use of profiled timber formers.



Tie rod system



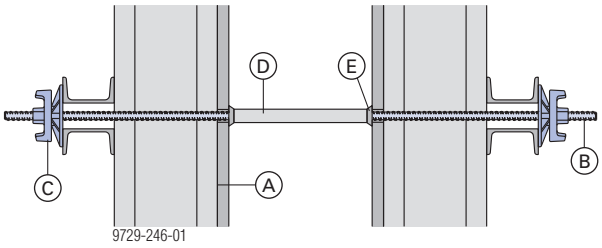
WARNING
Delicate rod steel!
- ➤ Never weld or heat tie rods.
- ➤ Tie rods that are damaged or have been weakened by corrosion or wear must be withdrawn from use.

NOTICE
Allow for elongation of long or coupled tie rods (see the Calculation Guide 'Doka formwork engineering' or contact Doka)!

For correct positioning of the form ties, see section Top 50 elements, and the relevant project plan.
Doka also offers cost-effective solutions for creating watertight form-tie points.

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

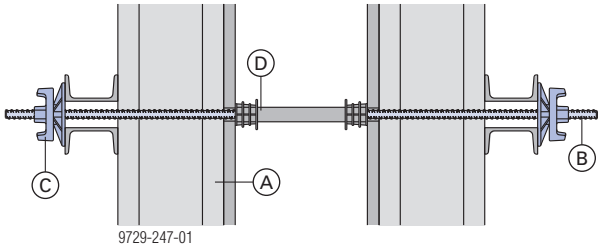
Tie rod system 15.0



A	Top 50 element
B	Tie rod 15.0
C	Super plate 15.0
D	Plastic tube 22mm
E	Universal cone 22/10mm

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

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



A	Top 50 element
B	Tie rod 15.0
C	Super plate 15.0
D	Distance piece (ready-to-use for certain wall thicknesses)

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

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

The Friction type ratchet SW27 or Box spanner 27 0.65m can be used for **low-noise releasing and tightening** of the following anchoring components:
- Super plate 15.0
- Wing nut 15.0
- Star grip nut 15.0

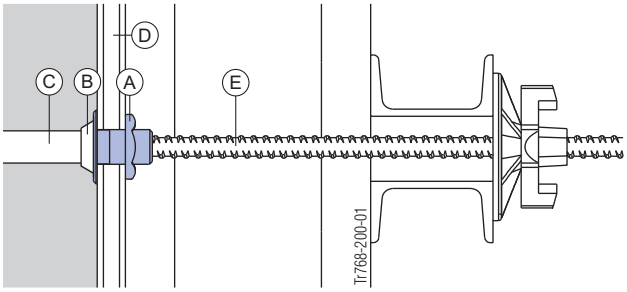
Form-ply protection

The Form-ply protector 22mm protects the form-ply from damage at form-tie points. This is a particular advantage for formwork with high numbers of repeat uses.

Possible thicknesses of form-ply: 18 - 27 mm

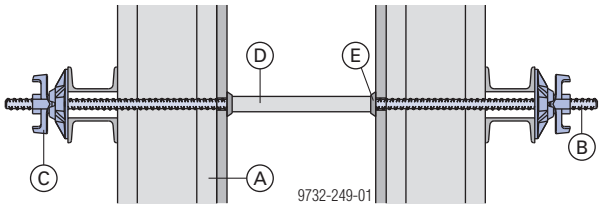
In order to fit the form-ply protector, a 30 mm diameter hole must be drilled in the form-ply first.

If necessary, the form-ply protector fitted into the form-ply can be closed off with the Framax plug R20/25.



A	Form-ply protector 22mm (width-across 46 mm)
B	Universal cone 22/10mm
C	Plastic tube 22mm
D	Form-ply
E	Tie-rod 15.0mm

Tie rod system 20.0



A	Top 50 element
B	Tie rod 20.0
C	Super plate 20.0 B
D	Plastic tube 26mm
E	Universal cone 26/10mm

Tie rod 20.0mm:

Permitted load-bearing capacity, allowing a 1.6 : 1 factor of safety against failure: 220 kN

Permitted load-bearing capacity to DIN 18216: 160 kN

Note:

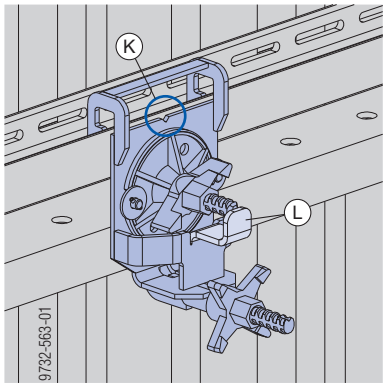
The Plastic tubes 26mm are left in the concrete and are sealed off with **Plugs 26mm**.

Operating the form-tie from one side

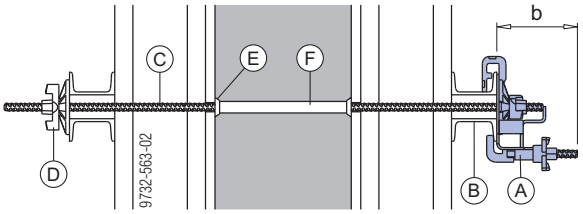
The **Top50 form-tie nut 15.0** and the **Top100 tec form-tie nut 20.0** make it possible to operate the form-tie from one end of the tie (e.g. where space is tight).

Suitable for U100, U120 and U140 walings with a 50 mm waling-gap.

The form-tie nut has an integrated stopper plate for the tie rod.



K	Notch for aligning the form-tie nut
L	Stopper plate for tie rod



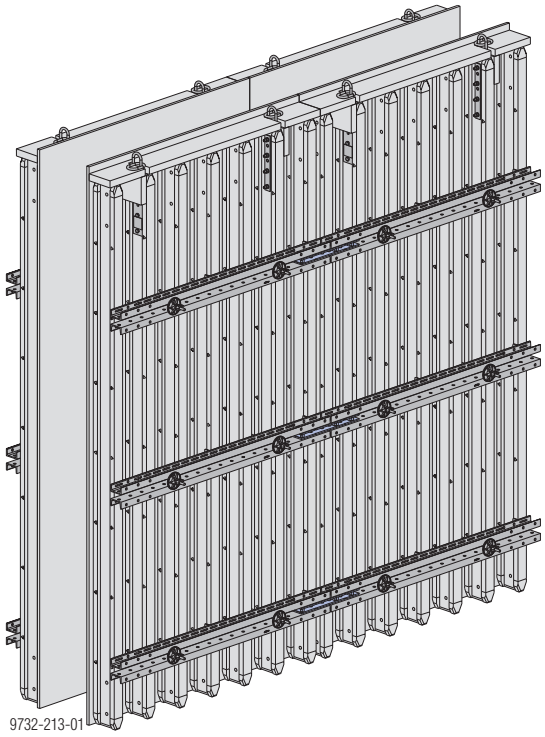
b ... 10 cm

A	Form-tie nut
B	Multi-purpose waling
C	Tie rod
D	Super plate
E	Universal cone
F	Plastic tube

Installation:

- ➤ Hook the form-tie nut onto the waling and clamp it on firmly with the integrated star-grip nut.
- ➤ Screw in the tie rod of the opposing formwork as far as the stopper plate.
- ➤ Fix the form tie with the super plate.

Inter-panel connections

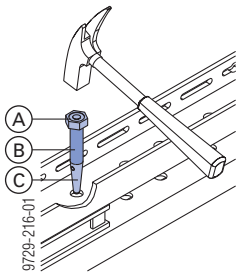


The elements are linked and aligned horizontally using **Formwork element connectors FF20/50 Z** and Connecting pins 10cm:

- fast, dropout-proof joints between elements
- additionally, the inter-element joint can be pulled tight in 2 stages
- a hammer is the only tool needed

Section modulus: 21.6 cm^3
Moment of inertia: 97.2 cm^4

The 3 zones of the Connecting pin 10cm:

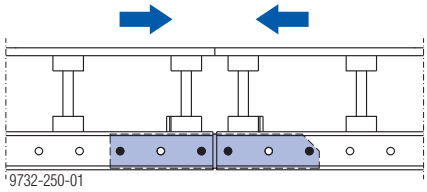


A	**Head**: (hammer)
B	**Shank**: (hold)
C	**Cone**: (pull tight)

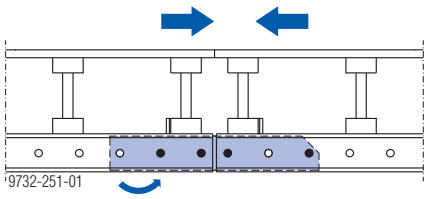
NOTICE

When the connecting pin is used in a horizontal position, secure it with a **Spring cotter 5mm**.

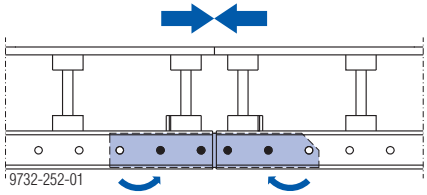
To fit normally



To pull tight half the way



To pull tight all the way

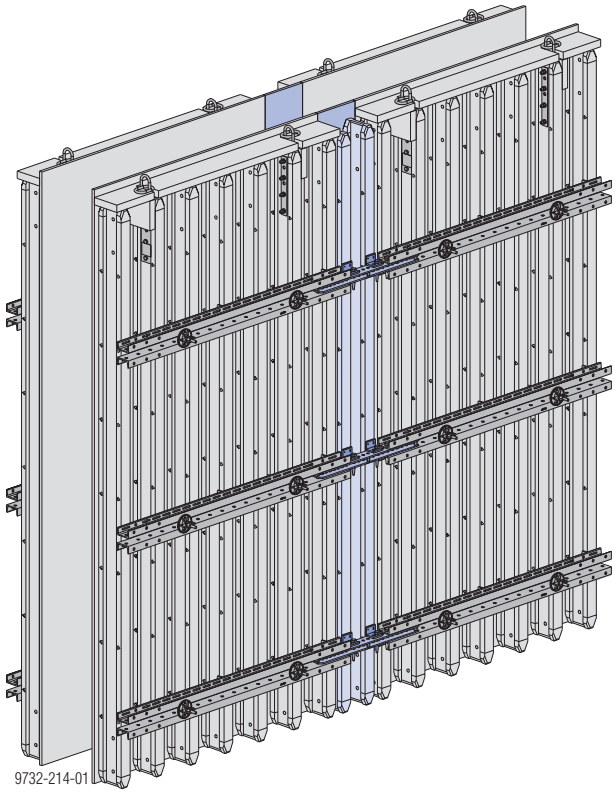


Note:
Only pull tight where there actually is a gap to close!

Other possible types of inter-panel connection

- Splice plate Top50 Z - with pull-tight function
- Anchoring plate FF20/50 - without pull-tight function (for details of how to use on inside corners, see section 90 degree corners)

Length adjustment using closures



Adjustable waling extensions are used for obtaining tension-proof and slippage-free links between the Top 50 elements.

NOTICE

When **connecting short elements to the closure zone**, watch out for possible collisions between the adjustable waling extensions and the formwork element connectors.

Adjustable waling extension FF20/50 and 1.40m Top50:

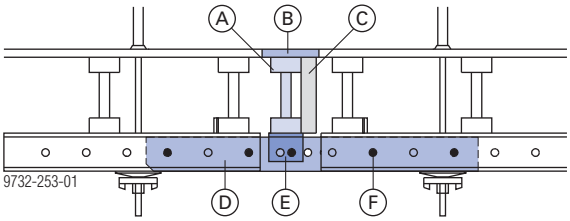
Section modulus: 21.6 cm^3

Moment of inertia: 97.2 cm^4

For closures of up to 50 cm

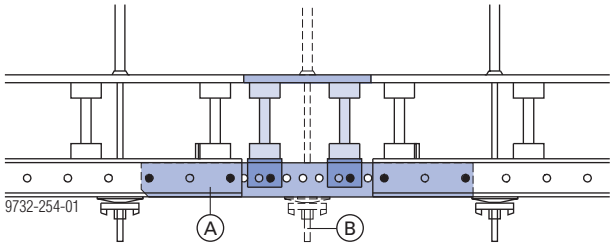
with Adjustable waling extension FF20/50 and formwork sheeting in the infill zone

Up to 23 cm



A	Doka beam H20
B	Doka formwork sheet
C	Nailed-on timber stud to add support to the infill
D	Adjustable waling extension FF20/50
E	Beam clamp Top50
F	Connecting pin 10cm

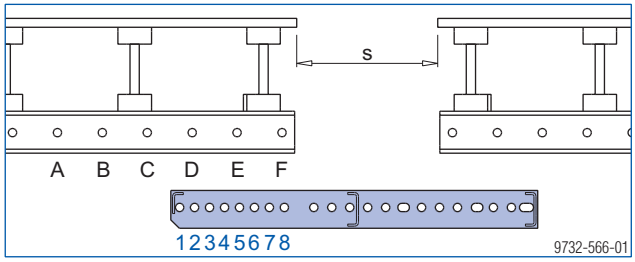
23 - 50 cm



A	Adjustable waling extension FF20/50
B	Where statically necessary - place a tie through the closure.

Determining the pin-fixing positions

Note:
Only the pin-fixing position on the 1st element needs to be determined.
After the 2nd element has been aligned, all the other pin-fixing positions will automatically be apparent.



Closure s [mm]	Pin-holes in waling					
	A	B	C	D	E	F
0				2		8
7		3	6			
				3	6	
14	1		7			
			1		7	
21				2		8
29				3	6	
					3	6
36				1		7
43				2		8
		2		8		
50		3	6			
				3	6	
57				1		7
64				2		8
71					3	6
79				1		7
		1		7		
86				2		8
		2		8		
93					3	6
100				1		7
107					2	5
114					3	6
			3	6		
121				1		7
		1		7		
128					2	5
136					3	6
143					1	4
150					2	5
			2		8	
157					3	6
			3	6		
164					1	4
171					2	5
178					3	6
186					1	4
			1		7	
193					2	5
			2		8	
200					3	6
207					1	4
214					2	5
221					3	6
				3	6	

Closure s [mm]	Pin-holes in waling					
	A	B	C	D	E	F
228					1	4
			1		7	
235					2	5
243					3	6
250					1	4
257				2		8
264					3	6
				3	6	
271					1	4
278					2	5
285					3	6
293				1		7
300				2		8
314					1	4
321					2	5
328					3	6
335				1		7
357					1	4
364					2	5
371					3	6
400					1	4
407					2	5
442					1	4

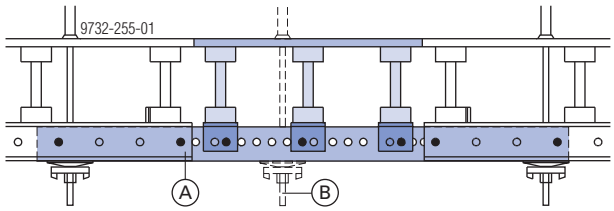
Example:

- Closure needed: 264 mm

Result:
- pin-holes in waling: D and E or E and F
- pin-holes in Adjustable waling extension: 3 and 6

For closures of 50 - 64 cm

with Adjustable waling extension 1.40m Top50 and formwork sheeting in the infill zone

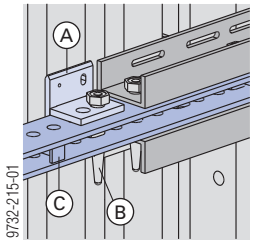


A Adjustable waling extension 1.40m Top50

B Where statically necessary - place a tie through the closure.

Beam clamp Top50

For fastening the Doka beams H20 to the Adjustable waling extensions. The beam clamp is held in place by a Connecting pin 10cm.



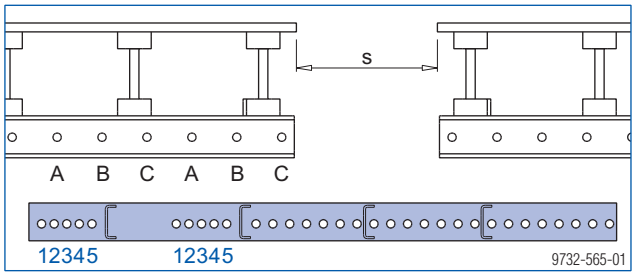
A Beam clamp Top50

B Connecting pin 10cm

C Adjustable waling extension

Determining the pin-fixing positions

Note:
Only the pin-fixing position on the 1st element needs to be determined.
After the 2nd element has been aligned, all the other pin-fixing positions will automatically be apparent.

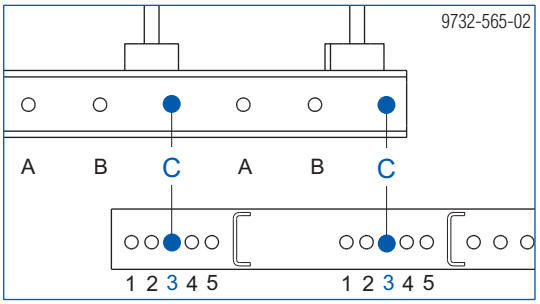


Closure	Pin-holes in waling		
s [mm]	A	B	C
0			5
2	4		
3			4
5		3	
9		2	
12	1		
13			1
16		4	
19		3	
22	2		
23			2
25		1	
29		4	
30			4
32	3		
33			3
36		2	
39		5	
40			5
42	4		
43			4
46		3	
49		2	
52	5		
53			5
56		4	
59		3	
60			3
62	2		
63			2
66		5	
69		4	
70			4
72	3		
73			3
76		2	
79		5	
80			5
82	4		
83			4
85		3	
89		2	
90			2
92	5		
93			5

Closure	Pin-holes in waling		
s [mm]	A	B	C
210			2
212	1		
213			5
216		4	
219		3	
220			3
223			2
225		5	
229		4	
230			4
233			3
236		2	
239		1	
240			5
243			4
246		3	
249		2	
250			2
253			5
256		4	
259		3	
260			3
263			2
265		5	
270			4
273			3
276		2	
279		1	
280			5
283			4
285		3	
289		2	
290			2
293			5
296		4	
300			3
303			2
306		5	
310			4
313			3
316		2	
319		1	
320			5
323			4
325		3	

Closure	Pin-holes in waling		
s [mm]	A	B	C
96		4	
99		3	
100			3
102	2		
103			2
106		5	
109		4	
110			4
112	3		
113			3
116		2	
119		5	
120			5
122	4		
123			4
126		3	
129		2	
130			2
132	1		
133			5
136		4	
139		3	
140			3
142	2		
143			2
146		5	
149		4	
150			4
152	3		
153			3
156		2	
159		5	
160			5
163			4
166		3	
169		2	
170			2
172	1		
173			5
176		4	
179		3	
180			3
182	2		
183			2
185		5	
189		4	
190			4
193			3
196		2	
199		5	
200			5
203			4
206		3	
209		2	

Closure	Pin-holes in waling		
s [mm]	A	B	C
330			2
333			5
336		4	
340			3
343			2
345		1	
350			4
353			3
356		2	
360			5
363			4
366		3	
370			2
373			5
380			3
383			2
386		1	
390			4
393			3
396		2	
400			5
403			4
410			2
415			5
420			3
423			2
426		1	
430			4
433			3
440			4
443			4
450			2
453			1
460			3
463			2
470			4
473			3
480			5
490			2
493			1
500			3
503			2
510			4
520			5
530			2
533			1
540			3
550			4
560			1
570			2
580			3
600			1
610			2
640			1



Example:

- Closure needed: 433 mm

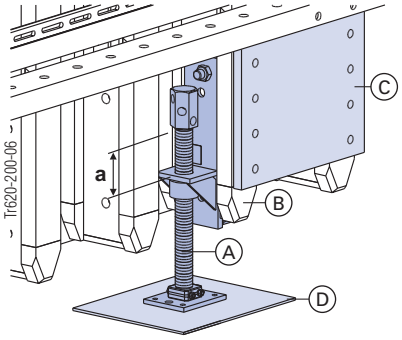
Result:

- Pin-holes in waling: 2x 'C'
- pin-holes in Adjustable waling extension: 2x '3'

Adapting to different heights

using Height adjuster for formwork beams

The Height adjuster for formwork beams is used for vertical adjustment of **upright** Top 50 elements, e.g. on shafts.



Adjusting range **a**: max. 24.5 cm

A	Height adjuster for formwork beams (incl. bolting items)
B	Doka beam
C	Stiffening board between 2 adjacent beams (site-provided)
D	Sliding plate (site-provided)

Permitted load-bearing capacity: 1000 kg

Ways of operating:

- Box nut 50 3/4" and Reversible ratchet 3/4" (with lengthening-piece if needed)
- Tie rod 15.0mm or round steel bar (max. diam. 17 mm)
  There are holes in the hexagon nut of the spindle for inserting a tie rod.

For custom applications, the footplate can also be fixed on e.g multi-purpose walings.

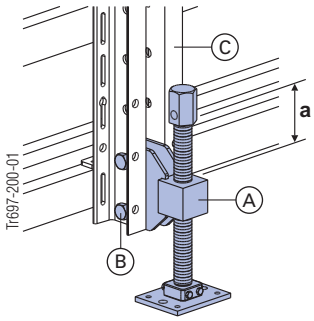
NOTICE

When using the height adjuster on shaft formwork, ensure that the platform decking is adequately dimensioned, as the loads act on the decking in a concentrated manner via the spindles!

Elements can be moved and relocated more easily using sliding plates.

using Height adjuster WS10-WU16

The Height adjuster WS10-WU16 is used for vertical adjustment of timber-beam formwork elements used in the **horizontal**.



Adjusting range **a**: max. 24.5 cm

A	Height adjuster WS10-WU16
B	Connecting pin 10cm and Spring cotter 5mm
C	Multi-purpose waling

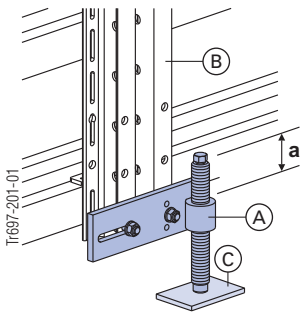
Permitted load-bearing capacity: 3000 kg
Not suitable for tensile loads!

Ways of operating:

- Box nut 50 3/4" and Reversible ratchet 3/4" (with lengthening-piece if needed)
- Tie rod 15.0mm or round steel bar (max. diam. 17 mm)
  There are holes in the hexagon nut of the spindle for inserting a tie rod.

using Adjusting spindle M36

The Adjusting spindle M36 is used for vertical adjustment of **horizontal** Top 50 elements.



Adjusting range **a**: max. 22 cm

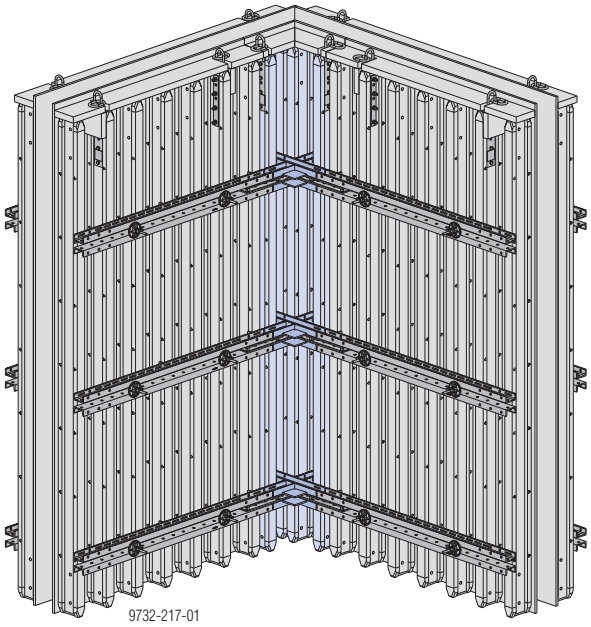
A	Adjusting spindle M36 (incl. bolting items)
B	Multi-purpose waling
C	Steel plate (site-provided), e.g. 150x100x10 mm

Permitted load-bearing capacity: 1000 kg

Ways of operating:

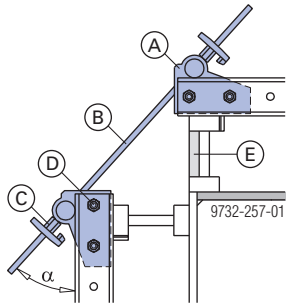
- Box nut 24 and Reversible ratchet 1/2"

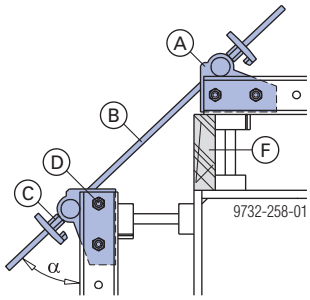
90 degree corners



Outside corners

The elements are clamped together with the **Universal angle tie bracket** and Tie rods 15.0.





α ... 23° - 64°

A	Universal angle tie bracket
B	Tie rod 15.0
C	Wing nut 15.0
D	Connecting pin 10cm
E	Flange reinforcement
F	Plank

Permitted anchor tensile force: 90 kN

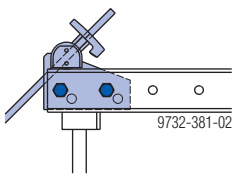
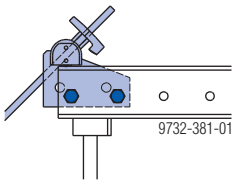
NOTICE

Statical proof of the multi-purpose waling used is required!

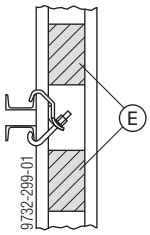
CAUTION

Risk of tie overload if fixing position is incorrect!

➤ Depending on the multi-purpose waling used, pin the Universal angle tie bracket at the correct position!

Fixing position for Multi-purpose waling **WS10** Top50	Fixing position for Multi-purpose waling **WU12** Top50
	

The **flange reinforcement** prevents the flange of the beam breaking when exposed to high oblique pull from the tie rod.



E	Fit 2 flange reinforcements (strips of formwork sheeting) between the flanges of the outside beam, so that the form-ply of the second corner element is supported.

Inside corners

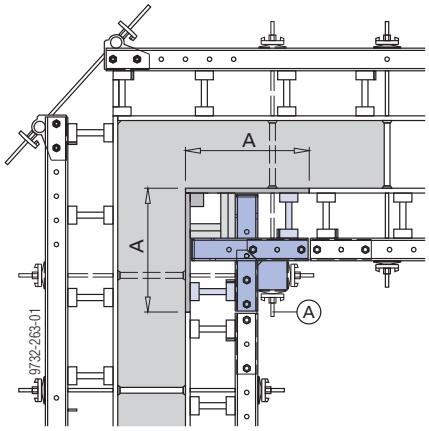
with Corner waling 20

With the Corner waling 20, it is possible to make a genuine inside-corner element. The Doka beams give the element the necessary rigidity, and also ensure dimensional accuracy.

The adjacent Top 50 elements are fastened with the normal connector components.

Note:

For more information on how to mount the inside corner, see section Element assembly.



Formwork sheet	Corner dimension [A]
21mm	54.9 cm
27mm	55.5 cm

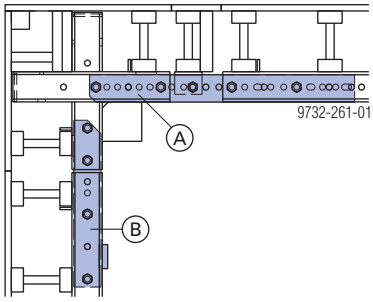
A Where statically necessary - place a tie through the Corner waling 20.

NOTICE

When connecting the Corner waling 20 to adjacent elements, please remember:

If the Adjustable waling extension reaches a long way into the Corner waling 20, **no Formwork element connector FF20/50 Z** may be used on the 2nd leg. Because of the 'pull-tight function hole-grid', this connector cannot be installed one hole-grid further along.

In this case, use an **Anchoring plate FF20/50** instead.

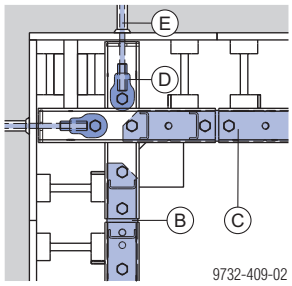


A Adjustable waling extension

B Anchoring plate FF20/50

Tying in the Corner waling 20

Corner walings 20 manufactured from 2010 onwards can also be tied using the Eye-lug tie rod 15.0.



B Anchoring plate FF20/50

C Formwork element connector FF20/50 Z

D Eye-lug tie rod 15.0

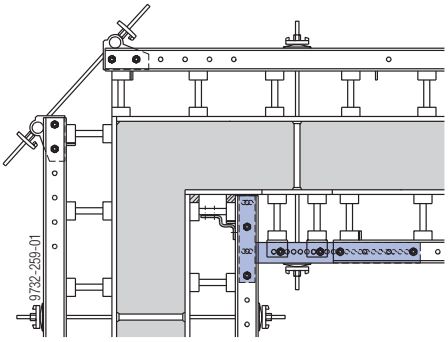
E Tie-rod 15.0

Max. load on tie-rod: 70 kN

with Internal angle plate H20 Top50

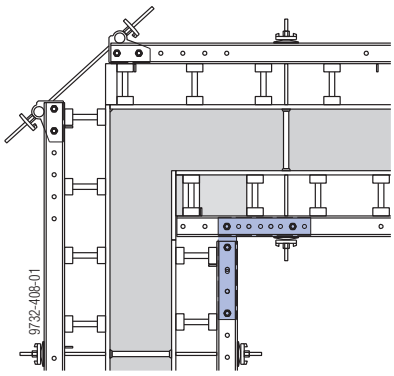
An economical way of making inside corners **with a closure function**. (For closures of up to 32 cm in 1 cm increments)

By nailing a form-ply to the end face of standard elements, these are turned into corner elements. The concrete pressure on the end face is transferred by means of reinforcements (e.g. Fastening plate) on the edge beam.



with Corner plate H20/H36 Top50

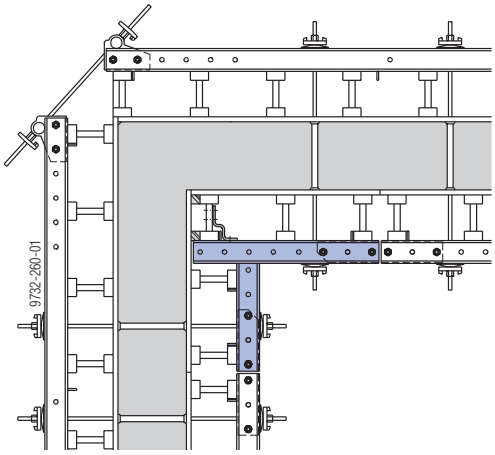
Same function as Internal angle plate H20 Top50, but without the closure function.



with Shaft corner waling WS10 Top50

The Shaft corner waling WS10 Top50 is a 90°-welded multi-purpose waling used for making sturdy corner elements. This special waling is custom-built on a project-specific basis.

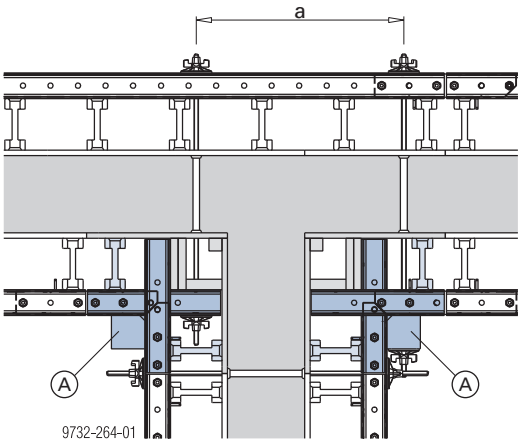
The shaft corner waling is often used for shaft formwork (see section Shaft formwork).



T-junction

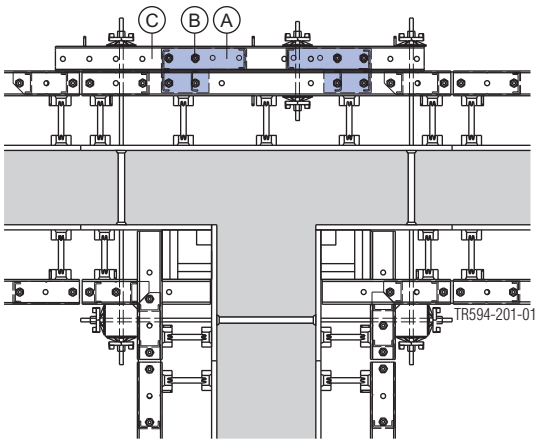
with Corner waling 20

The Corner waling 20 allows the form ties to cross over in the corner zone. This avoids an excessively wide spacing **a** between the form ties on the opposing element.



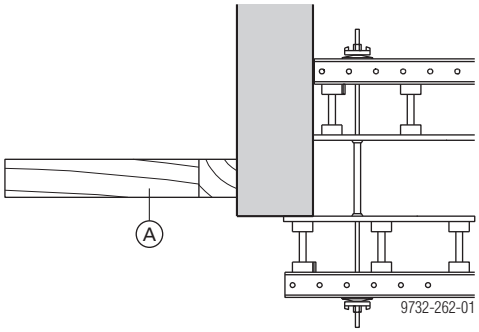
A Corner waling 20

The Offset plate FF20/50 makes it possible to arrange Multi-purpose walings WS10 Top50 in parallel, as a means of reinforcing T-junctions.



A Offset plate FF20/50
B Connecting pin 10cm
C Multi-purpose waling

Corner connections



A Site-provided timber brace

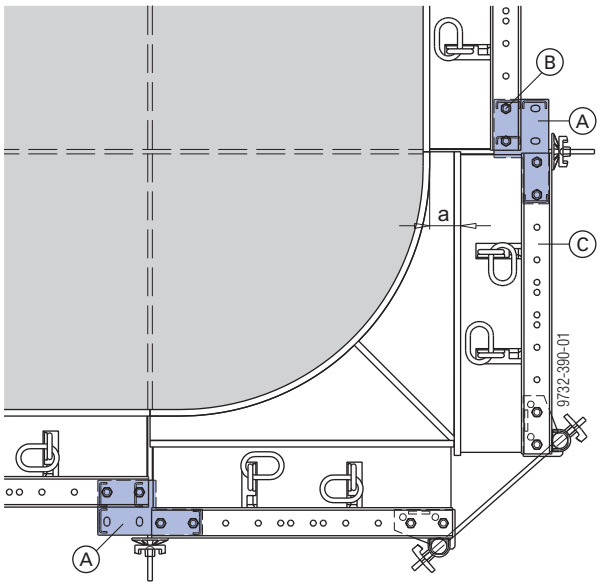
NOTICE

Do a static check to determine whether **shoring of the wall** and **tension anchoring is required to restrain the formwork** (horizontal forces on short walls/large wall thicknesses).

Rounded surfaces in corner zones

using Offset plate FF20/50

The Offset plate FF20/50 makes it possible to arrange Multipurpose walings WS10 Top50 in parallel, for forming large rounded surfaces in corner zones.



a ... 10.2 cm

A Offset plate FF20/50
B Connecting pin 10cm
C Multi-purpose waling

Acute & obtuse-angled corners

For non-right-angled corners, too, the standard components of the Large-area formwork Top 50 will always provide an optimum solution.

Outside corners

In a similar way to the right-angled corners, on **outside corners** the elements are also mainly connected using **Universal angle tie brackets**.

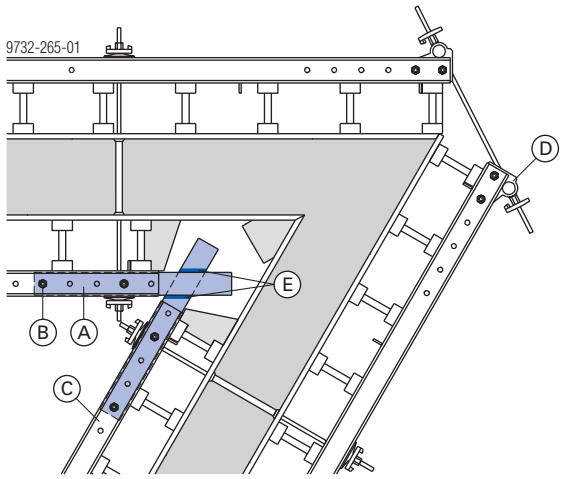
Inside corners

with Half splice plate

Half splice plates are used for fabricating low-cost corner plates, with any angle, directly on the site.

To make a corner plate in this way, two Half splice plates are needed. After the formwork has been plumbed at the prescribed angle, these two plates must be welded firmly together.

> ➤ The user is responsible for the integrity of the welded joint!

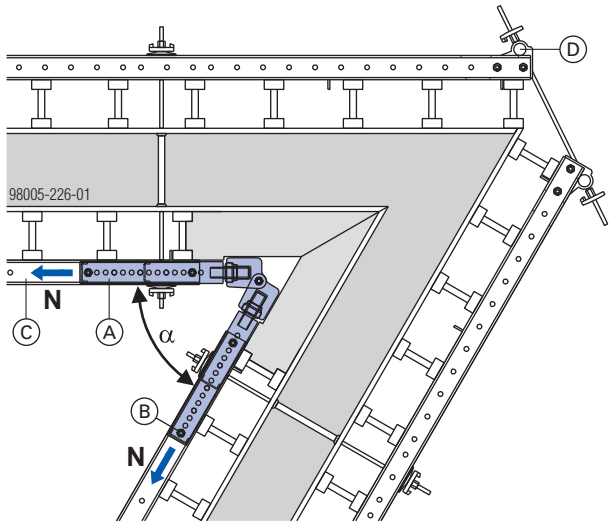


A	Half splice plate
B	Connecting pin 10cm
C	Multi-purpose waling
D	Universal angle tie bracket
E	Weld-seam

with Swivel joint plate

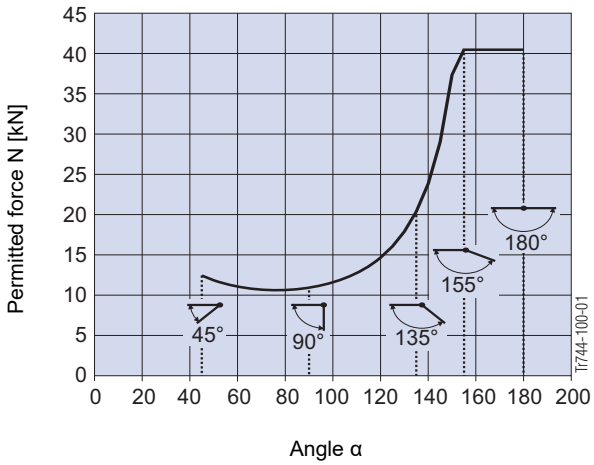
The Swivel joint plate is an alternative to using two Half splice plates welded onto one another.

- Angles of between 45° and 180° are possible.
- Rough adjustment is carried out in 35.7 mm increments (= 1/3 of the hole-grid of the Multipurpose waling).
- Fine adjustment is carried out using the integral adjusting thread, with a max. theoretical formwork deviation of ±2.5 mm.
- Use suitable sealing tapes on any gaps which occur at joints.



A	Swivel joint plate
B	Connecting pin 10cm
C	Multi-purpose waling
D	Universal angle tie bracket

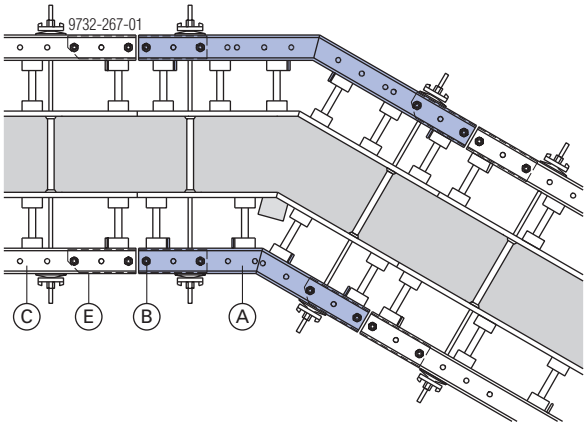
Dimensioning diagram

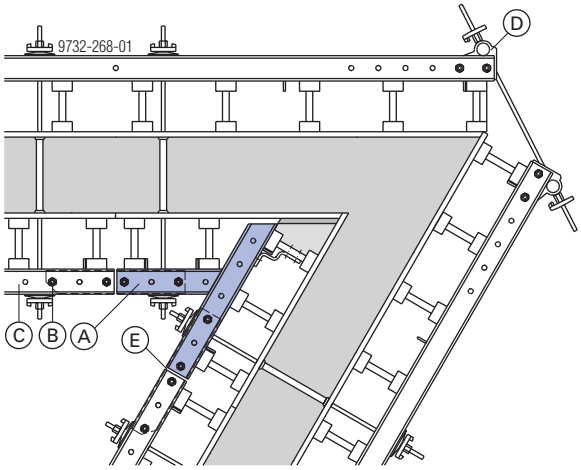


Angular waling WS10 Top50

The angular waling is a welded multipurpose waling for constructing strong corner elements. The legs are rigidly fixed at any desired angle other than 90°.

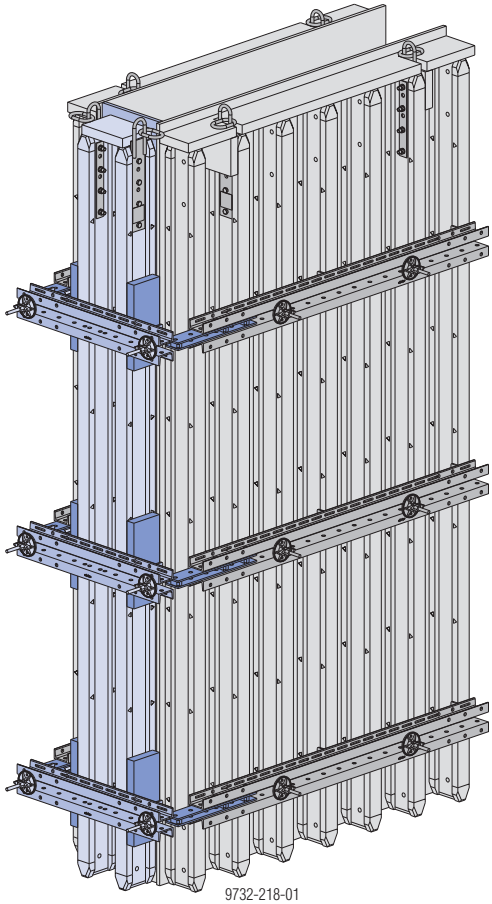
This special waling is custom-built on a project-specific basis.





A	Angular waling WS10 Top50
B	Connecting pin 10cm
C	Multi-purpose waling
D	Universal angle tie bracket
E	Splice plate

Stop-end formwork



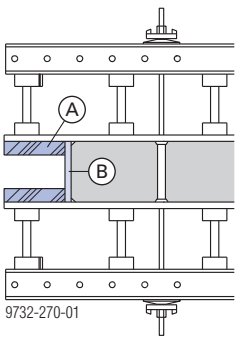
The Large-area formwork Top 50 is a complete formwork system. As such, it also offers practical solutions for e.g. the stop-end formwork.

NOTICE

Do a static check to determine whether **shoring/tension anchoring** is required to restrain the formwork (horizontal forces on short walls/large wall thicknesses).

Walls up to approx. 20 cm thick

Planks are simply nailed onto the Top 50 element and a strip of formwork sheeting is inserted.



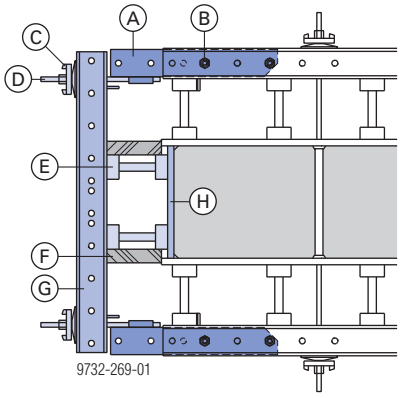
A Planks
B Strip of formwork sheeting

Walls thicker than approx. 20 cm

The **Anchoring plate FF20/50** ensures that the loads are safely transferred into the waling system of the Top 50 elements.

Maximum permitted load where 2 Connecting pins 10cm are used: 56 kN
Section modulus: 21.6 cm^3
Moment of inertia: 97.2 cm^4

The tie rods are screwed into the Anchoring plate, and the correct spacing of the stop-end element is adjusted using the Super plate 15.0.



A Anchoring plate FF20/50
B Connecting pin 10cm
C Super plate 15.0
D Tie-rod 15.0
E Doka beam
F Nailed-on plank
G Multi-purpose waling
H Strip of formwork sheeting

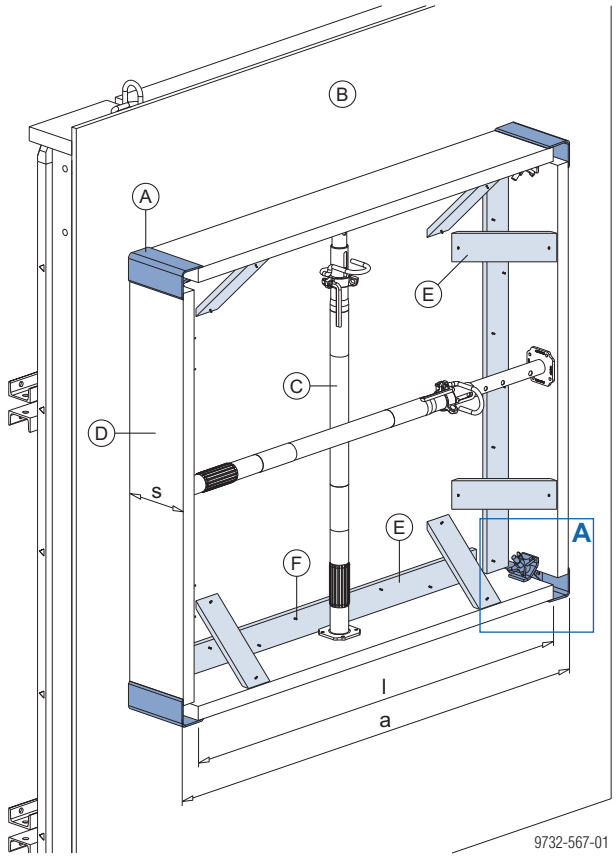
The **Anchoring plate FF20/50** can also be used as a normal element connector (no pull-tight function).

Combining a **Corner connecting plate 90/50** with an Anchoring plate makes it possible to lift the stop-end element jointly with the wall element.

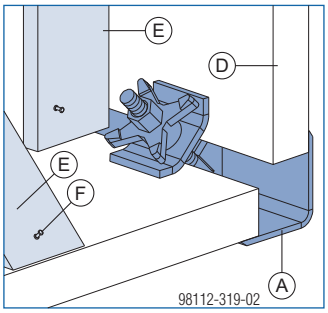
Anchoring plates are used on one side, and Corner connecting plates on the other.

Window and door openings

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



Close-up A:



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

A	Box-out clamp
B	Top 50 element
C	Doka floor prop
D	Plank (wall thickness/2-5 cm)
E	Board (10/3 cm)
F	Double-headed nail

How to mount:

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

Vertical stacking of panels

The vertical-stacking methods shown here are only suitable for:

- lifting
- setting down and
- crane-handling

the formwork.

NOTICE

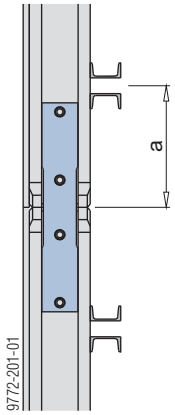
On account of the reduced load-bearing capacity and possible deformation, the application of load from fresh-concrete pressure or concrete weight on the vertical stacking joint is only conditionally permissible.

Consequently, one of the following measures has to be implemented:

- Whenever possible, make the cantilevers short and symmetrical at the beam joints.
- Provide additional waling planes.
- Position the vertical stacking joint at the zero point of the moments.
- Model the vertical stacking joint as an articulation in the statical calculation.

with Stacking plate H20

The Stacking plate H20 serves as a bolt-on longitudinal connector for Doka beams, and is used for vertical stacking of formwork panels. The plate is bolted onto the beams through the pre-drilled holes at either end of the beam.



a ... min. 40 cm

Permitted moment:

- where outermost hole is 9 cm from edge of beam: 2.0 kNm
- where outermost hole is 5 cm from edge of beam: 1.5 kNm

The number of Stacking plates H20 needed will depend on the overall height of the gang-form:

- **Up to an overall height of 6.0m:** a Stacking plate H20 must be fastened to every 2nd beam.
- **Up to an overall height of 8.0 m:** a Stacking plate H20 must be fastened to every beam.

  In addition, it is advisable to place extra multi-purpose walings across the horizontal joins, in order to achieve greater stability.
- **Over 8.0 m, up to a max. overall height of 14.0 m:** a Stacking plate H20 must be fastened to every beam.

  In addition, it is **absolutely essential** to place extra multi-purpose walings across the horizontal joins, in order to achieve sufficient stability.

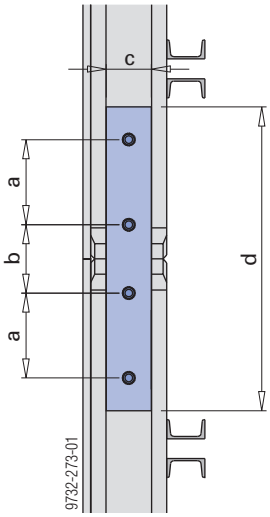
Included in scope of supply:

- 4 hexagon bolts M20x70 (width across flats: 30 mm)
- 4 hexagon nuts M20
- 4 spring washers A20

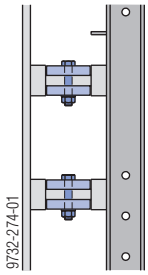
Note:
Make sure that the bolted connections are tightened firmly!

with board-plates

An in-situ solution that often works well in practice. The existing holes at the end of the beam can be used for making the bolted connections.



a ... 22.4 cm
b ... 18.0 cm
c ... 11.5 cm
d ... min. 80.0 cm



Permitted moment: 0.7 kNm

Items needed for each beam joint:

Plank*) 115/25, l_{min} = 80.0 cm	2
Hexagon bolt M20x110	4
Hexagon nut M20	4
Washer 22	4

*) It is also possible to use strips of 3-SO 21mm or 27mm formwork sheeting instead of the planks.

Shaft formwork

Shaft formwork with Stripping corner I and Transition plate

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

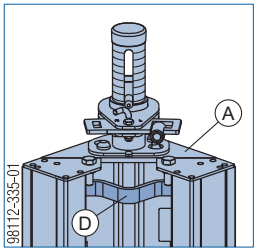
Product features:

- 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 brackets and 4-part lifting chain).

Two different types of **stripping spindle** can be used for setting up and stripping the formwork:

- Framax stripping spindle I with ratchet
- Framax stripping spindle I

The **transition plate** makes it possible to use the Framax stripping corner I with Large-area formwork Top 50.



A Framax stripping corner I

D Crane lifting point (to be used exclusively for lifting **only one** stripping corner on its own!)

Vertical stacking of Framax stripping corners I

➤ Connect the bottom stripping corner to the Top 50 element.

➤ Pull the coupling bolt out of the top stripping corner.

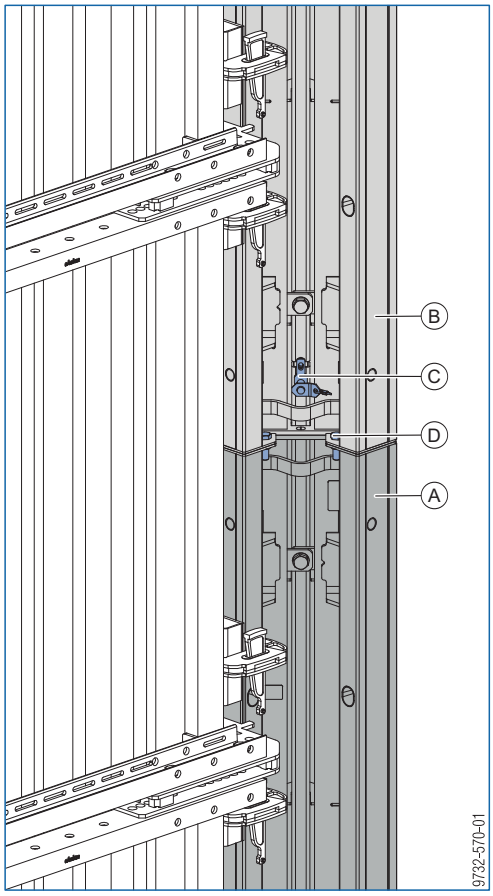
➤ Remove the two hexagon bolts from the bottom stripping corner.

➤ Engage the top stripping corner flush on the bottom stripping corner.

➤ Push the coupling bolt back in.

➤ Bolt the stripping corners together with the 2 hexagon bolts and hexagon nuts removed beforehand.

➤ Connect the top stripping corner to the Top 50 element.



A Bottom stripping corner I

B Top stripping corner I

C Coupling bolt

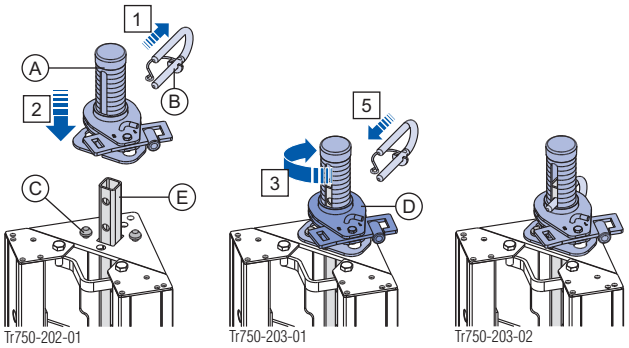
D Hexagon bolt ISO 4019 M16x45 8.8 galv. + Hexagon nut ISO 4032 M16 8 galv.

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

Mounting the Framax stripping spindles I

These assembly instructions apply to both **Stripping spindles I** and **Stripping spindles I with ratchet**.

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



A	Framax stripping spindle I or Framax stripping spindle I with ratchet
B	U-bolt
C	Centring stud of stripping corner
D	Ratchet or spindle nut
E	Push rod

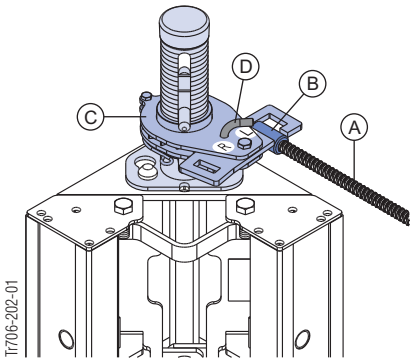
Animation:
https://player.vimeo.com/video/256374622

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**.



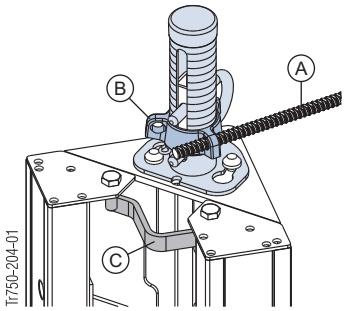
A	Tie-rod 15.0mm
B	Weldable coupler 15.0
C	Ratchet
D	Change-over lever

Operating the Framax stripping spindle I

➤ Push a Tie rod 15.0mm through one of the holes in the spindle nut.

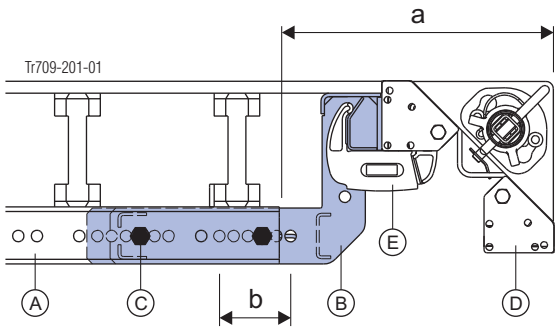
➤ **Setting up**: Twist the spindle nut **clockwise**.

➤ **Stripping**: Twist the spindle nut **anti-clockwise**.



A	Tie rod 15.0mm
B	Spindle nut
C	Slinging point (to be used exclusively for lifting **only one** stripping corner on its own!)

Adjustment range of Transition plate



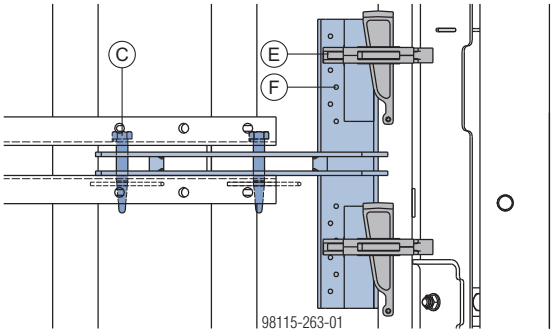
a ... 42.5 - 55.0 cm
b ... Adjusting range 12.5 cm, in 2.5 cm increments

A	Multi-purpose waling
B	Transition plate 18mm, 21mm or 27mm
C	Connecting pin 10cm and Spring cotter 5mm
D	Framax stripping corner I
E	Quick acting clamp RU

Possible sizes of shaft

Length of WS10 Top50 waling [cm]	Width of shaft	
	min. [cm]	max. [cm]
75	160	185
100	185	210
125	210	235
150	235	260
175	260	285
200	285	310
225	310	335
250	335	360
275	360	385
300	385	410

Connections



C Connecting pin 10 cm with Spring cotter

E Framax quick acting clamp RU

F Framax screws (not included in scope of supply)

NOTICE

In order to obtain the full available stripping-play, make sure that the Framax quick acting clamps RU are mounted at staggered heights (i.e. not opposite one another).

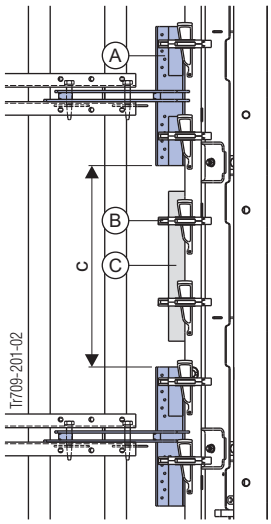
Supporting the plywood face

Max. spacing c [cm] between 2 transition plates (form-ply not supported by Framax moulded timber or squared timber)

	Permitted formwork pressure [kN/m²]				
Formwork sheet	30	40	50	60	70
3-ply sheet 21mm	15	10	10	--	--
3-ply sheet 27mm	25	20	15	15	10
Multi-ply sheet 18mm	40	30	25	20	15
Multi-ply sheet 21mm	50	40	35	30	25

Number of quick acting clamps RU needed where form-ply is supported by Framax moulded timber or squared timber

Spacing c [cm]	Number of quick acting clamps RU
max. 30	1
max. 60	2
max. 90	3

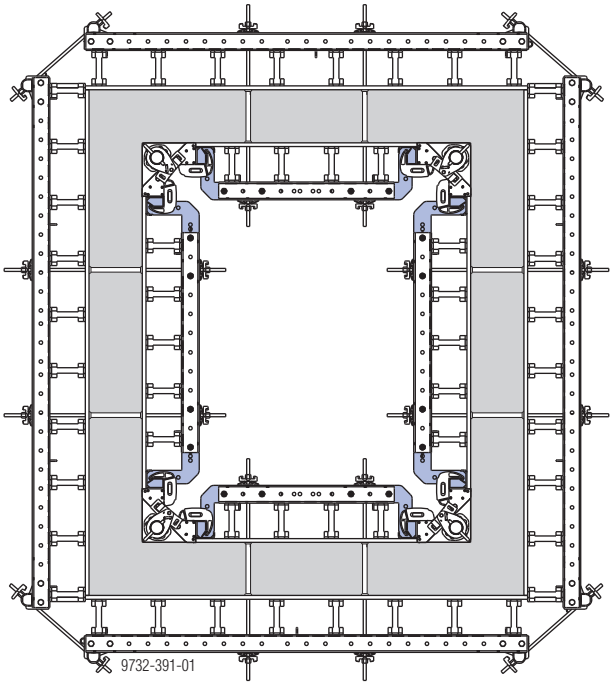


A Transition plate

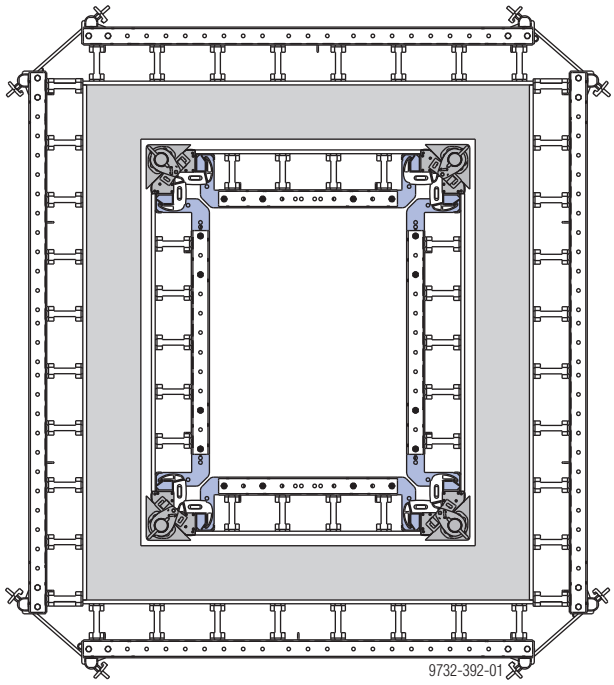
B Framax quick acting clamp RU

C Framax moulded timber or squared timber

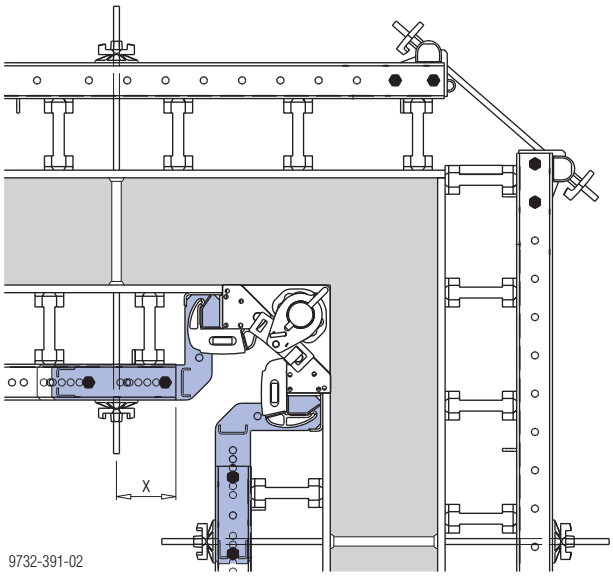
Shaft formwork closed ready for pour



Shaft formwork stripped ready for lifting

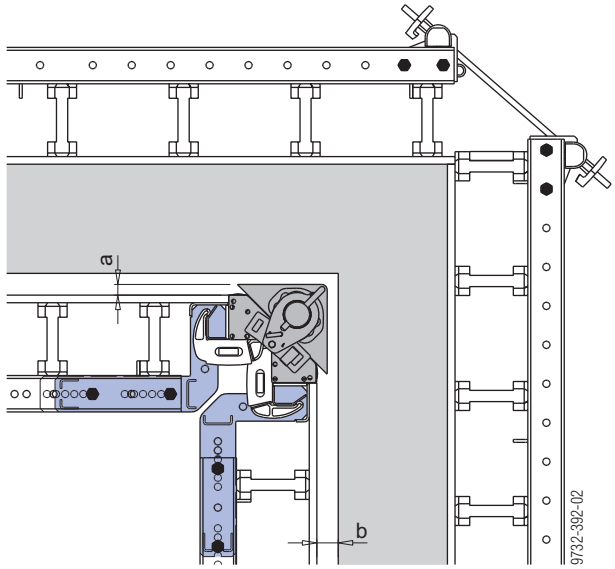


Form-tie zones:



x ... 16.5 - 22.0 cm

Stripping play:

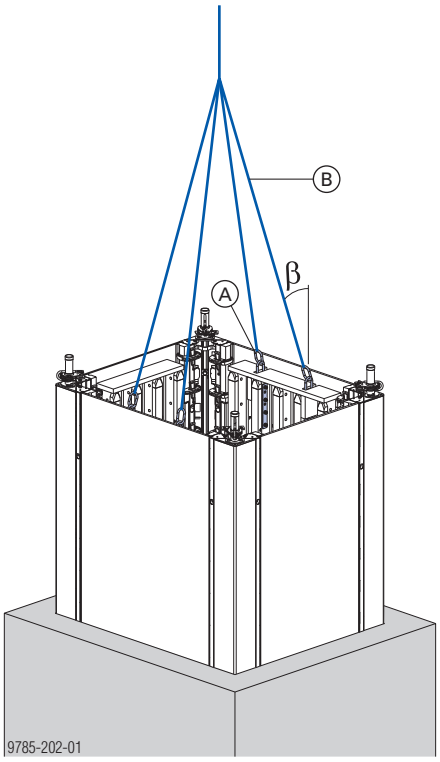


a ... 3.0 cm
b ... 6.0 cm

NOTICE

- Only tie through the waling.
  It is not permitted to tie through the Transition plate.
- The outside and inside formwork must be dimensioned in line with the structural-design requirements for the Large-area formwork Top 50 and a permitted waling load of 90 kN/m!

Lifting by crane



β ... max. 15°

A Lifting-bracket

B Four-part lifting chain

The crane hook on the Stripping corner I is not allowed to be used for lifting the shaft formwork.

➤ The shaft formwork must **only be lifted using lifting-brackets**, or in one piece with the shaft platform.

Permitted weight of the shaft formwork:
4000 kg with 4 lifting-brackets
Reason: 15° oblique pull in both directions

Doka shaft platform

With its telescopic shaft beams, this platform can accommodate any dimension of structure. The inside formwork can be 'parked' on the platform and repositioned together with the platform.

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

Circular formwork

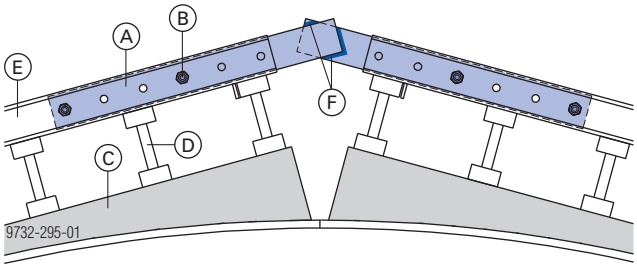
Curved structures can be formed with half splice plates or swivel joint plates. For more information on the plates, see section Acute & obtuse-angled corners.
Profiled timber formers are placed between the Doka beams and the form-ply to provide the desired shape.

Minimum bending radii of Doka formwork sheets:

Formwork sheet	Direction of grain of the face layer	Min. radius [m]
Dokaplex 9mm	transverse	2.0
	longitudinal	3.5
Dokaplex 18mm	transverse	4.0
	longitudinal	7.0
Dokaplex 21mm	transverse	5.0
	longitudinal	8.0
Doka 3-SO 21mm	transverse	3.5
	longitudinal	8.0
Doka 3-SO 27mm	transverse	5.0
	longitudinal	10.0

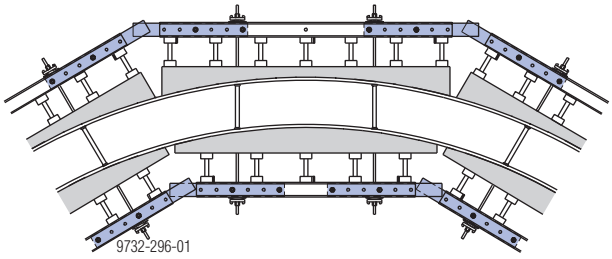
Smaller radii can be achieved by cutting into the formwork sheets or by using strips of formwork sheeting.

with Half splice plate

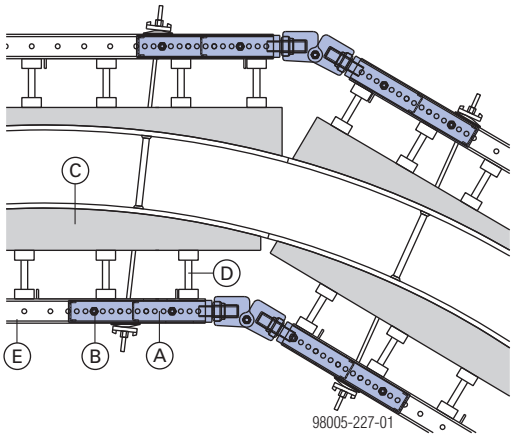


A Half splice plate
B Connecting pin 10cm
C Profiled timber former
D Doka beam
E Multi-purpose waling
F Weld here after the formwork has been plumbed and aligned

Example - formwork for a circular tank

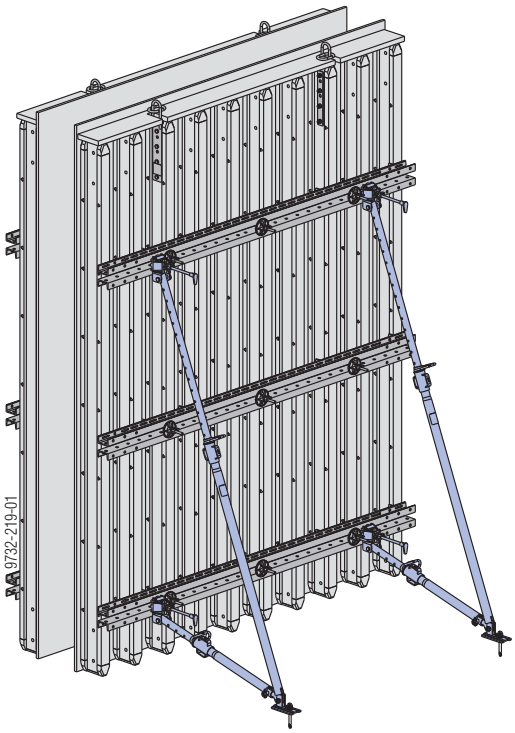


with Swivel joint plate



A Swivel joint plate
B Connecting pin 10cm
C Profiled timber former
D Doka beam
E Multi-purpose waling

Plumbing accessories



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

WARNING
Risk of the formwork tipping over!
- ➤ Ensure stability of the formwork elements in **every** phase of the construction work!
- ➤ Observe all applicable safety regulations!
- ➤ If **high wind speeds** are likely, and when work finishes for the day or before prolonged work-breaks, always take extra precautions to fix the formwork in place.
  Suitable precautions:
  - set up the opposing formwork
  - place the formwork against a wall
  - anchor the formwork to the ground
- ➤ The safety pin is only for rough adjustment of the plumbing accessory. Do not attempt to remove or release the safety pin under load.

Permitted spacings [m] of the plumbing accessories:

Formwork height [m]	Panel strut		Eurex 60 550
	340	540	
3.00	4.00		
4.00	3.00		
5.00		3.00	
6.00		2.00	
7.00	4.00		4.00
8.00	3.00		4.00

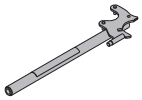
The values apply for a wind pressure of w_e = 0.65 kN/m². This results in a peak velocity pressure of q_p = 0.5 kN/m² (102 km/h) where $c_{p, net}$ = 1.3. The greater wind loads encountered at exposed formwork-ends must be restrained by additional plumbing accessories (e.g. struts or pipe-braces). In cases where higher wind pressure is encountered, the number of struts must be determined by static calculation.

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

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

Example: Where the formwork height is 7.00 m, the following are needed for every 8.00 m wide gang-form:
- 2 Panel struts 340
- 2 Eurex 60 550

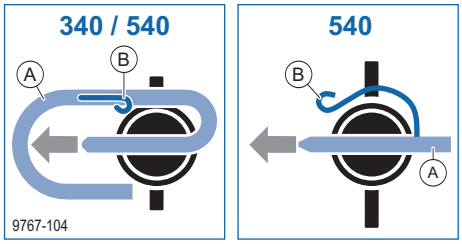
Universal dismantling tool
For easy operation of the spindle nuts.



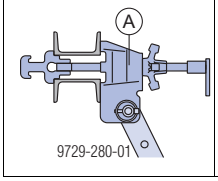
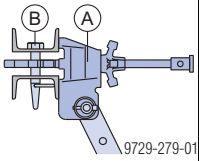
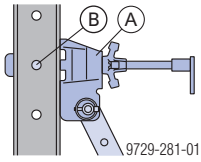
Pre-assembly

- ➤ Install heads on the plumbing accessory.
- ➤ Fix the plumbing accessory to the formwork and to the ground (see connection possibilities below for details).
- ➤ Precision adjustment of the plumbing strut with adjusting nut.

- Safety pin **(A)** must be pushed all the way into the plumbing accessory and secured in position by the locking spring **(B)** .
- Ensure functionality of the locking spring **(B)** .



Possible ways of connecting to the multipurpose waling

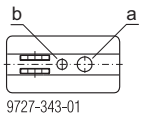
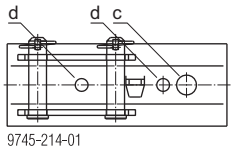
Horizontal waling		Vertical waling
Option 1	Option 2	
		

A Prop head EB
B Connecting pin 10cm + Spring cotter 5mm

Fixing to the ground

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

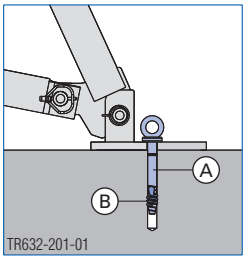
Drilled holes in footplate

Panel struts	Eurex 60 550
	

a ... diam. 26 mm
b ... diam. 18 mm (suitable for Doka express anchors)
c ... diam. 28 mm
d ... diam. 18 mm (suitable for Doka express anchors)

Anchoring the footplate

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



A Doka express anchor 16x125mm
B Doka coil 16mm

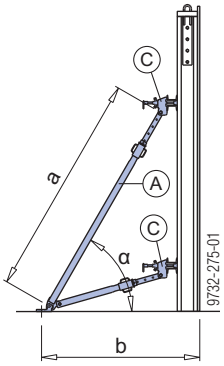
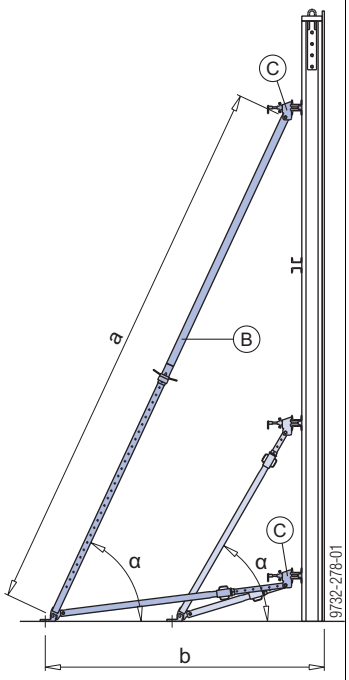
Doka express anchor 16x125mm:
Concrete strength class: min. C20/25
Cube compressive strength of the concrete during loading: $f_{ck,cube,current}$ = min. 15 N/mm² (corresponds to B15)

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

Required load-bearing capacity of alternative anchoring elements:
$R_d \geq 20.3$ kN ($R_k \geq 13.5$ kN)
Follow the manufacturers' applicable fitting instructions.

Panel struts

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

Panel strut 340	Panel strut 540
	
a ... 190.8 - 341.8 cm b ... 134.6 - 185.5 cm	a ... 310.5 - 549.2 cm b ... 228.1 - 277.2 cm

α ... approx. 60°

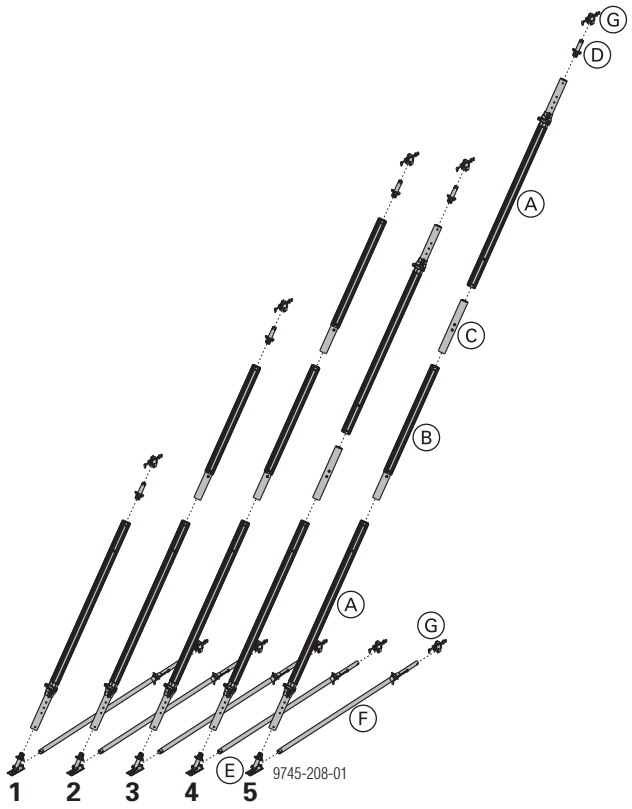
A Panel strut 340 IB
B Panel strut 540 IB
C Prop head EB

Eurex 60 550 used as a shoring & plumbing accessory

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

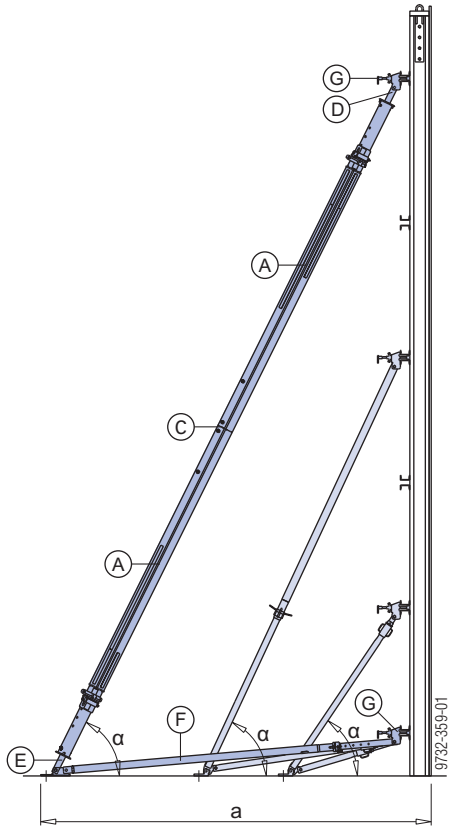
- Can be connected directly – without modification – to Doka framed formwork and Doka timber-beam formwork
- The 'Adjusting strut 540 Eurex 60 IB' makes handling much easier, especially when the formwork is being transferred.
- Can be telescoped in 10 cm increments, with continuous fine adjustment.

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



Type	Extension length L [m]	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 [kg]
1	3.79 - 5.89	1	—	—	1	1	1	2	91.1
2	5.79 - 7.89	1	1	—	1	1	1	2	112.4
3	7.79 - 9.89	1	2	—	1	1	1	2	133.7
4	7.22 - 11.42	2	—	1	1	1	1	2	142.5
5	9.22 - 13.42	2	1	1	1	1	1	2	163.8

Example of a possible combination of Type 4



a ... 361.0 - 600.4 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

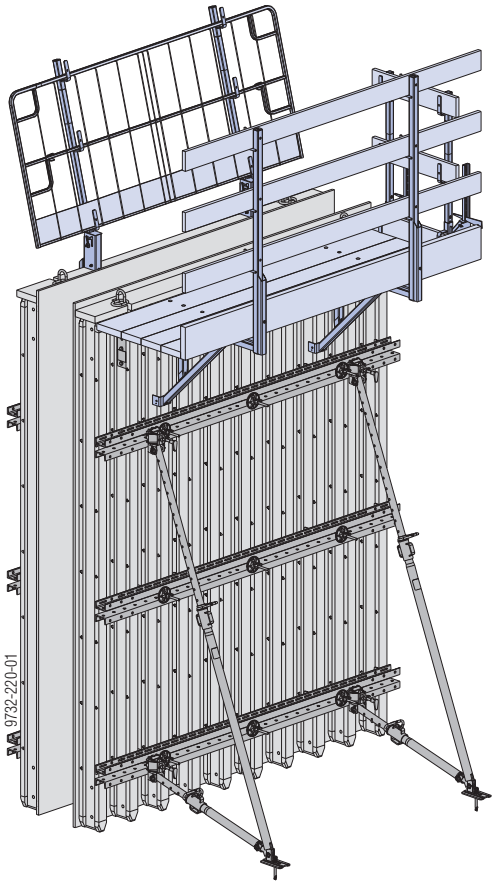
A good rule of thumb here is:

The length of the shoring & plumbing accessory (i.e. the complete Eurex 60 550 plumbing-strut assembly) = the height of the element to be shored.

Pouring platforms with single brackets

Doka brackets can be used to make pouring platforms that can easily be assembled by hand.

They can be attached to any point on the Doka beam. This also makes it possible to erect intermediate platforms.



Precondition for use

Observe all applicable safety regulations.

Only fit pouring platforms to formwork structures of adequate stability ensuring that the expected loads can be taken.

Ensure that the formwork gang is sufficiently rigid.

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

NOTICE

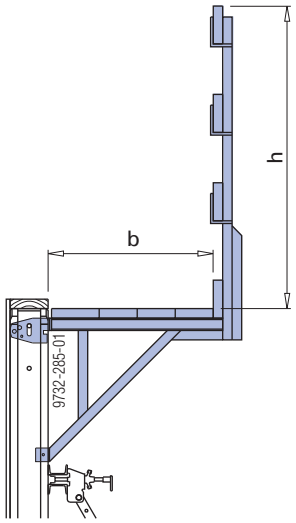
The brackets must be secured against accidental lift-out.

Note:

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

Observe all national regulations applying to deck and guardrail boards.

Universal bracket 90



b ... 87 cm
h ... 160 cm

Permitted service load: 1.5 kN/m² (150 kg/m²)
Load Class 2 to EN 12811-1:2003
Max. influence width: 2.00 m

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

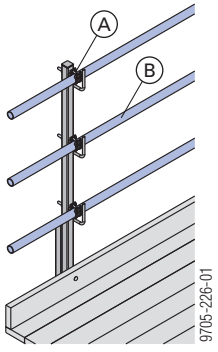
- Deck-boards min. 20/5 cm
- Guardrail boards min. 15/3 cm

Deck-boards and guardrail boards: Per 1 metre length of platform, 0.9 m² of deck-boards and 0.8 m² of guardrail boards are needed (provided on site).

Fastening the deck-boards: with 5 cup square bolts M10x70 and 1 cup square bolt M10x160 per bracket (included with product).

Fastening the guardrail boards: with 4 nails per bracket (not included with product).

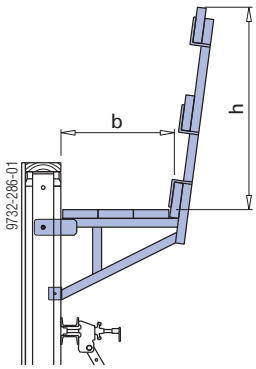
Using scaffold tubes



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

A Screw-on coupler 48mm 95
B Scaffold tube 48.3mm

Top scaffold bracket L



b ... 62 cm
h ... 115 cm

Permitted service load: 1.5 kN/m² (150 kg/m²)
Load Class 2 to EN 12811-1:2003
Max. influence width: 2.00 m

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

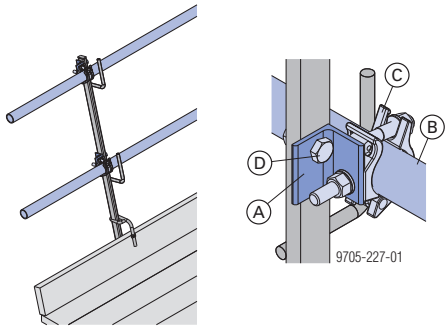
- Deck-boards min. 20/5 cm
- Guard-rail boards min. 15/3 cm

Deck-boards and guard-rail boards: Per 1 metre length of platform, 0.65 m² of deck-boards and 0.6 m² of guard-rail boards are needed (site-provided).

Fastening the deck-boards: with 3 square bolts M10x120 per bracket (not included with product).

Fastening the guard-rail boards: with nails

Using scaffold tubes

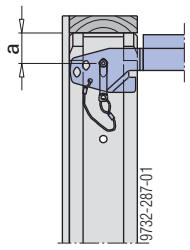
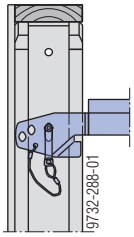
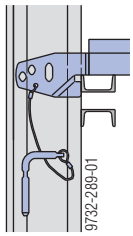


Tools: Fork wrench 22 for mounting the couplers and scaffold tubes.

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

Possible ways of fixing

WARNING
Risk of accidental lift-out if the bracket is fixed to a multi-purpose waling!
➤ Fix the bottom strut of every bracket with 28x60 nails or a hexagon bolt M10x140 and hexagon nut M10, on both sides of the strut.

In upper hole in beam	In lower hole in beam	In multi-purpose waling*)
 a ... 9 cm		

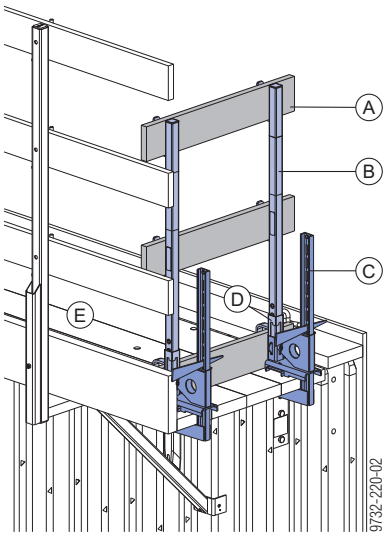
*) ... When using the beam screw S 8/70 or H 8/70, the universal bracket can be positioned directly at the multi-purpose waling.

CAUTION
➤ In the case of **H20 N and P** Doka beams where the first drilled hole is 5 cm from the end of the beam, it is not allowed to fix the bracket in the top hole in the beam!

Sideguards on exposed platform-ends

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

Xsafe edge protection XP



A	Guardrail board min. 15/3 cm (site-provided)
B	Handrail post XP 1.20m
C	Railing clamp XP 40cm
D	Toeboard holder XP 1.20m
E	Pouring platform

Installation:

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

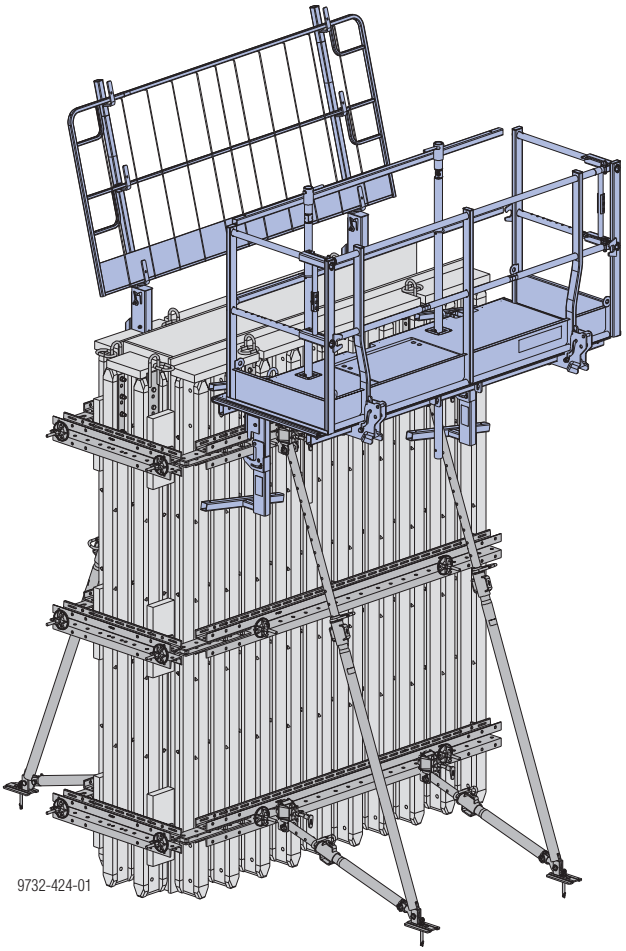
Animation: https://player.vimeo.com/video/276197020

Handrail clamp S

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

Pouring platforms

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



Preconditions for use:

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

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

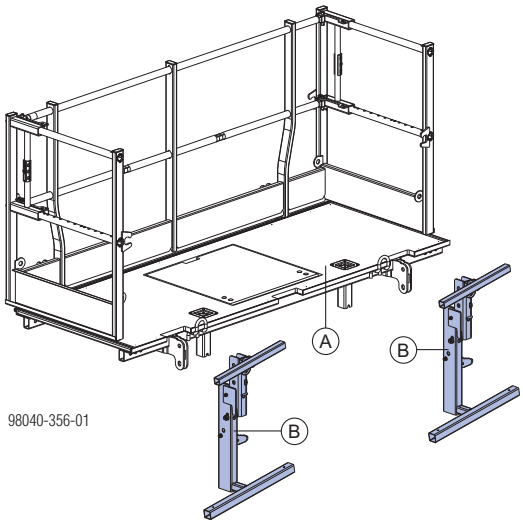
Ensure that the formwork gang has sufficient stiffness.

Observe all applicable safety regulations.

Xsafe plus platform

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

Follow the directions in the 'Xsafe platform system plus' User Information booklet.



A Xsafe plus platform

B Xsafe plus lifting adapter for beam formwork (2 adapters per platform)

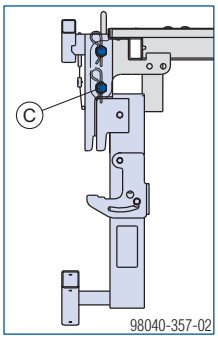
Permitted service load: 1.5 kN/m² (150 kg/m²)
Load Class 2 to EN 12811-1:2003

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

- max. one platform level
- max. element height when assembled face-down on the ground, with a gang-form width of 2.50m: 6.00 m

Mounting the lifting adapter onto the platform:

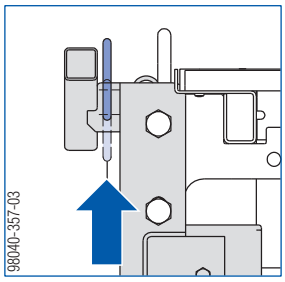
➤ Use Connecting pins 10cm and Spring cotters 5mm to mount the lifting adapter to the platform.



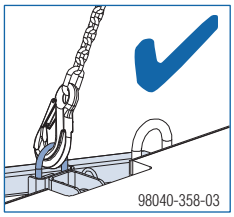
C Connecting pin 10cm and Spring cotter 5mm of the Xsafe plus platform

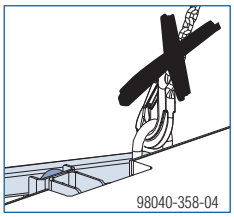
Lifting the platform onto the formwork:

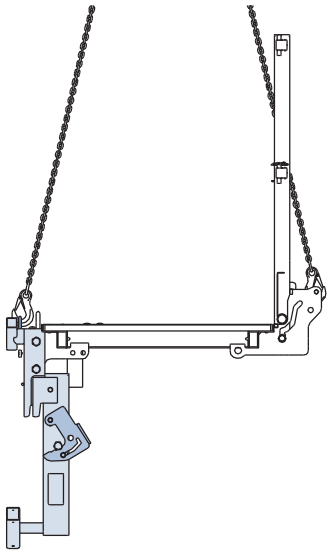
➤ Lift the lifting bracket by hand to easily attach the Doka 4-part chain.

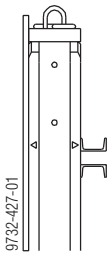


➤ Attach a 4-part lifting chain (e.g. Doka 4-part chain 3.20m) to the platform and hoist it towards the formwork.







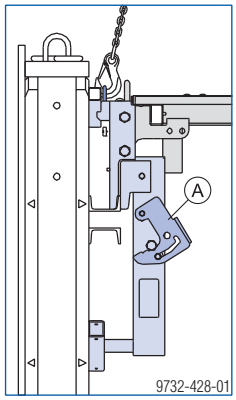


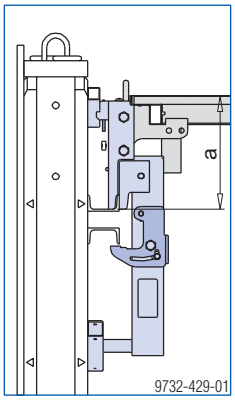
➤ Fix the platform in the top waling.

➤ Detach the 4-part lifting chain.
The securing hooks latch into place automatically.

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

The platform is now secured against accidental lift-out.





a ... 358 mm (distance between platform decking and multi-purpose waling)

A Securing hook

Lifting the platform off the formwork:

➤ Attach a 4-part lifting chain to the platform and raise it.
When the platform is raised by the 4-part lifting chain on the securing hook, the platform is automatically unlocked.

Do a sight-check to make sure that the securing hooks have been unlocked!

Extending the platform to either side

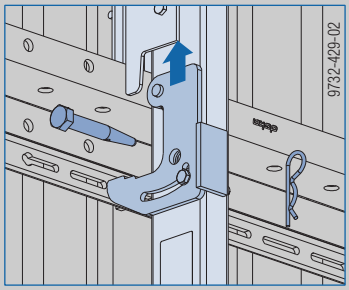
The platform can be lengthened at either end by using the **Xsafe plus platform extension 0.60m**.

CAUTION

Platforms with platform extensions can tip up.

Falling hazard!

- ➤ Do not step onto the **platform extension** until the safety hooks have been fixed in place.
- ➤ **Fix** the **safety hooks** of both Lifting adapters in place with the Connecting pins 10cm and the Spring cotters 5mm.



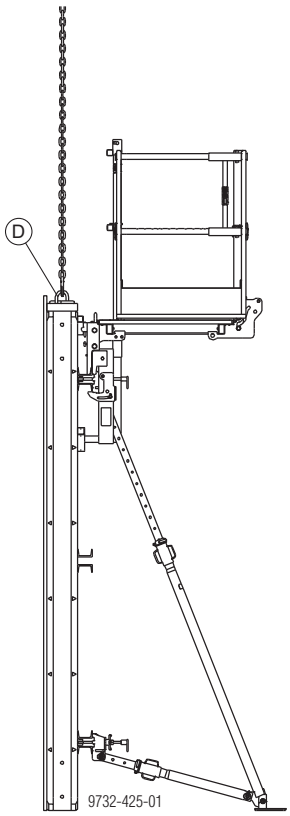
Moving the formwork and the platform in one piece

The formwork and the Xsafe plus platform can be lifted and repositioned in one piece.

NOTICE

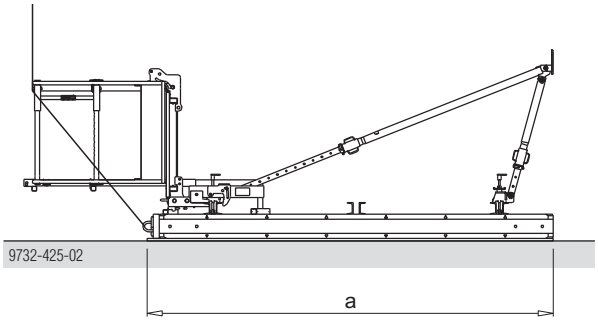
If the formwork is lifted with the pouring platform still mounted to it, the platform must be secured so that it cannot slip to either side.

Repositioning:



D Lifting bracket

Lifting / laying down:



a ... max. 6.00 m

CAUTION

It is not permitted to lift or lay down formwork units with heights of >6.00 m!

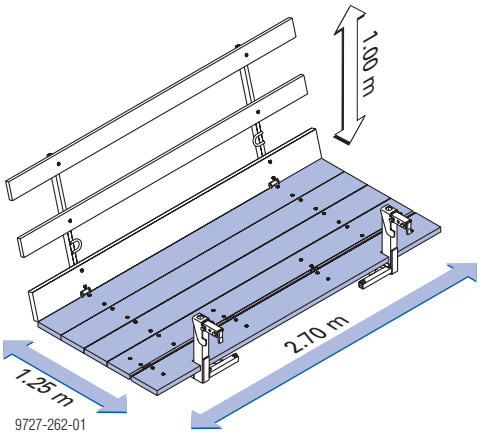
- ➤ In these cases, remove the platform before lifting / laying down the formwork.

Framax pouring platform U 1.25/2.70m

NOTICE

- It is not permissible to lay the formwork down flat together with the pouring platform!
- Planks can be used to bridge decking-to-decking gaps up to 50 cm for length adaptation. Minimum plank overlap 25 cm.

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

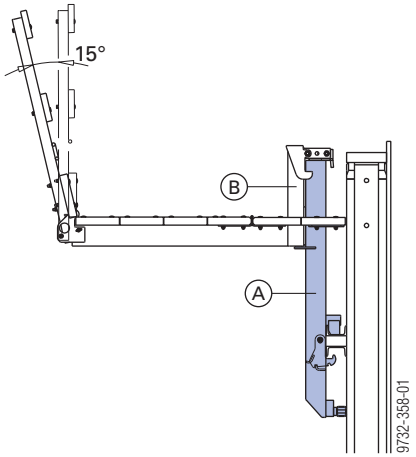


Permitted service load: 1.5 kN/m² (150 kg/m²)
Load Class 2 to EN 12811-1:2003

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

- Doka framed formwork Framax Xlife and Alu-Framax Xlife
- Wall formwork FF20 (with FF20 adapter for Framax pouring platform U)

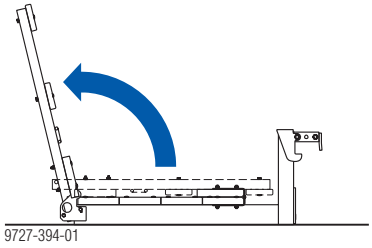
- The guard rail can be locked in either of two positions:
  - vertical
  - tilted by 15°
- With the aid of the Top50 adapter for Framax pouring platform U, the Framax pouring platform U can be fixed in the waling of the Top 50 elements (2 adapters per pouring platform).



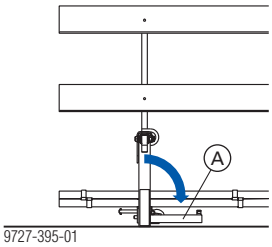
A Top50 adapter for Framax pouring platform U
B Framax pouring platform U

Preparing the pouring platform:

➤ Tilt up the guard rails and lock them in position.



➤ Put both side stops into position.



A Side stop

➤ Close the decking with the tilt-back board.

Mounting the adapter:

➤ Using a four-part lifting tackle, slightly raise the pouring platform.

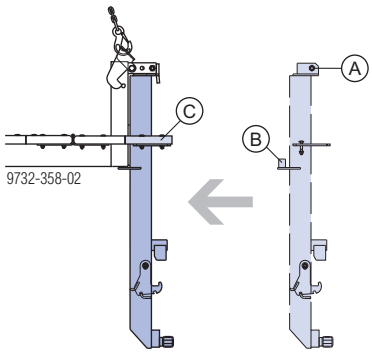
➤ Remove the screw from the platform connector of the adapter.

➤ Push the telescopic tube of the adapter into the bottom tubular opening on the Pouring platform U.

➤ Replace and tighten the screw on the platform connector of the adapter.

➤ An extra plank can be mounted where necessary (leave recesses for the adapters).

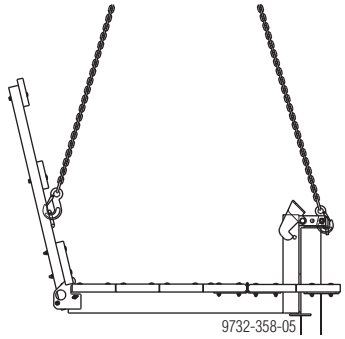
➤ When you have mounted the adapters on the Pouring platform U, lay it back on the ground.



A Bolt
B Inner tube
C Extra plank

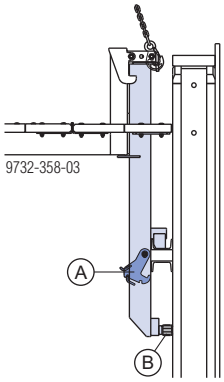
Lifting the platform onto the formwork:

➤ Attach a four-part lifting tackle to the hoisting points of the adapters at the front, and to the lifting brackets of the platform railings at the rear.



➤ Raise the safety catches of the adapters and latch them into the rear position.

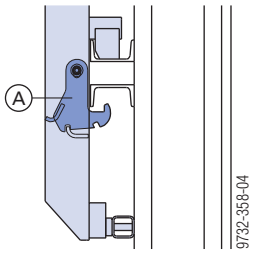
➤ Move the supporting profiles into the horizontal and slot the Pouring platform U onto the adapters on the multi-purpose walings.



A Safety plate
B Supporting profile

➤ **Secure the platform against accidental lift-out:** Raise the safety catches and latch them into the front position (the claw grips behind the multi-purpose waling).

Check that the safety catches **(A)** are in the right position!



The safety catches on the adapters can be operated from ground level, using a board.

➤ Detach the four-part lifting chain.

Lifting the platform off the formwork:

➤ Attach a four-part lifting tackle to the hoisting points of the adapters at the front, and to the lifting brackets of the platform railings at the rear.

➤ Release the safety catch by hand.

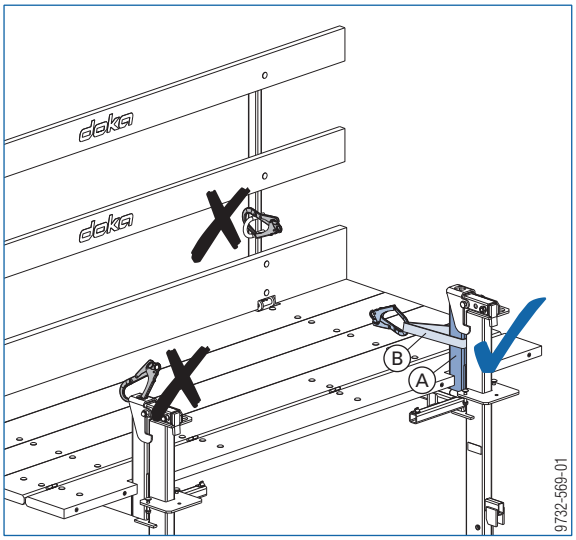
➤ Lift the pouring platform out of the way.

Anchorage points for personal fall arrest systems (PFAS)

WARNING

➤ The anchorage point must be at or above the minimum height required for the fall arrest to work.

➤ Loop a suitable strap round the vertical profile of the pouring platform and attach the personal fall-arrest system to this strap.

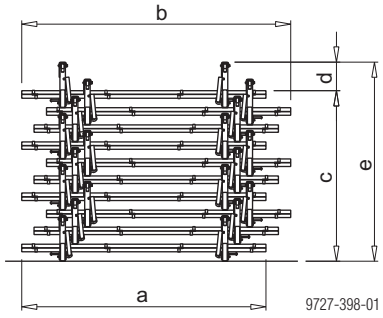


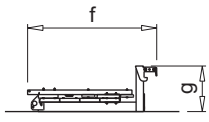
A Vertical profile of the pouring platform
B Strap

Transporting, stacking and storing

Stack of 10 Framax pouring platforms U

Single collapsed platform





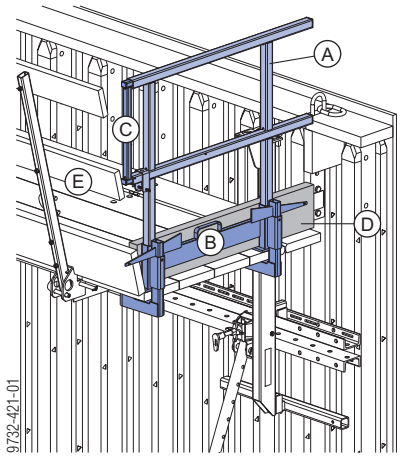
a ... 268 cm
b ... 295 cm
c... 10 x 18.7 cm
d... 31 cm
e... approx. 218 cm
f... 142 cm
g... 50 cm

Sideguards on exposed platform-ends

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

Note:
The plank and board thicknesses stated comply with the EN 338 C24 timber.
Observe all national regulations applying to deck and guardrail boards.

Side handrail clamping unit T



A	Side handrail clamping unit T
B	Clamping component
C	Integrated telescopic railing
D	Guardrail board min. 15/3 cm (site-provided)
E	Pouring platform

Assembly:
- ➤ Use the wedge (clamping range 4 to 6 cm) to fasten the clamping part to the decking of the pouring platform.
- ➤ Slot in the guardrail planks.
- ➤ Extend the telescopic railing to the desired length and secure it.
- ➤ Insert footguard (guardrail plank).

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

Opposing guardrail

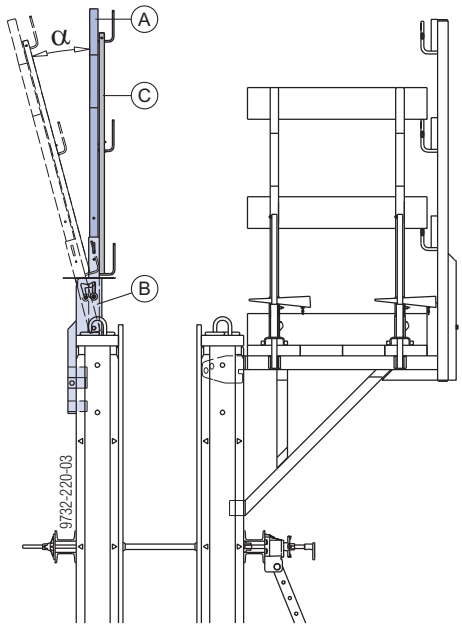
If there are work platforms mounted on one side of the formwork only, then a fall-protection barrier must be mounted to the opposing formwork.

Note:

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

Observe all national regulations applying to deck and guardrail boards.

Xsafe edge protection XP



α ...15°

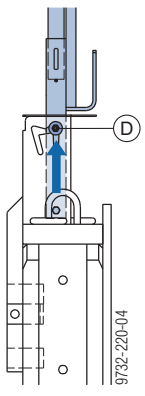
A Handrail post XP

B Timber-beam formwork adapter XP

C Protective grating XP or guardrail boards

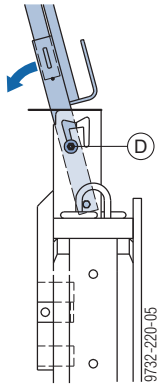
If necessary (e.g. to enlarge the available work-space during pouring), the safety barrier can be tilted outward by 15°.

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



D Safety bolt

➤ Tilt the safety barrier outward.

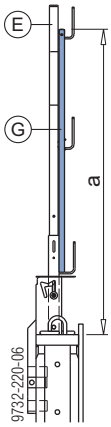
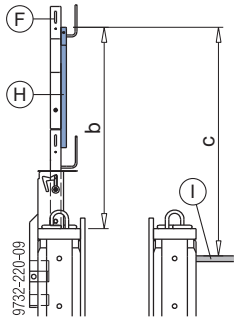
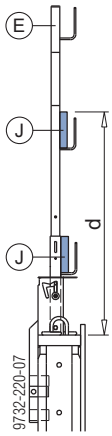


D Safety bolt

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

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

Types of safety barrier:

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

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

E Handrail post XP 1.20m

F Handrail post XP 0.60m

G Protective grating XP 1.20m

H Protective grating XP 0.60m

I Platform decking

J Guardrail board

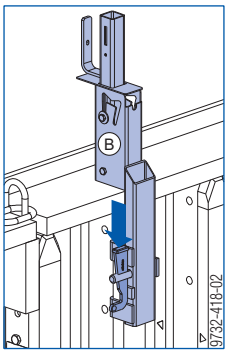
NOTICE

- When Protective gratings XP 0.60m are used to make the safety barrier, note the necessary minimum distance of 100 cm from platform decking to top of railing!
- When guardrail boards are used to make the safety barrier, it is not permissible to install guardrail boards in the top railing shackles.

Assembly

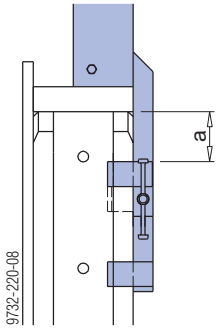
The counter railing can be mounted to both upright and face-down (ground-assembled) gang-forms.

➤ Mount the Timber-beam formwork adapter XP to the Top 50 element, fixing it on firmly with the wedge.



B Timber-beam formwork adapter XP

Make sure it is seated correctly and making full contact
(there must be 10 cm between the clamping part and the end of the beam)!

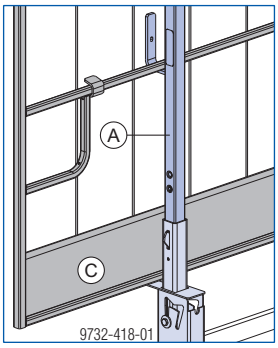


a ... 10 cm

➤ Push the Handrail post XP into the post-holding fixture on the Timber-beam formwork adapter XP until the locking mechanism engages.

➤ Fit on a Protective grating XP or guardrail boards.

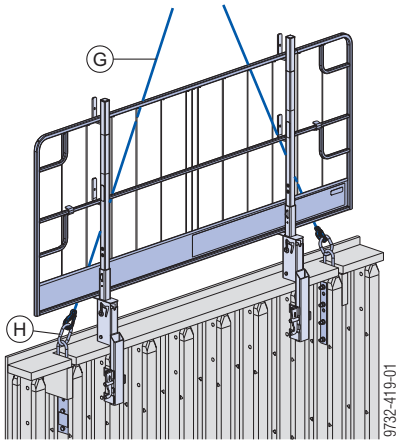
➤ Use Velcro® fasteners 30x380mm to secure the Protective gratings XP to the Handrail posts XP, and use nails (Ø 5 mm) to secure guardrail boards.



A Handrail post XP

C Protective grating or guardrail boards

Lifting by crane

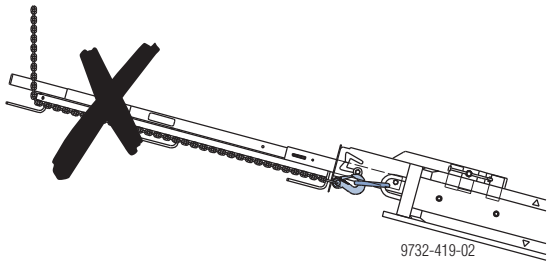


G Doka 4-part chain

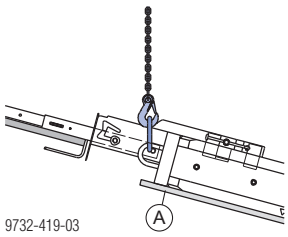
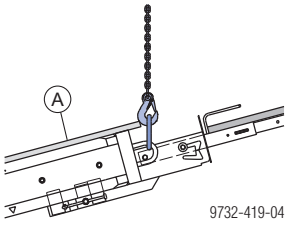
H Lifting bracket

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

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

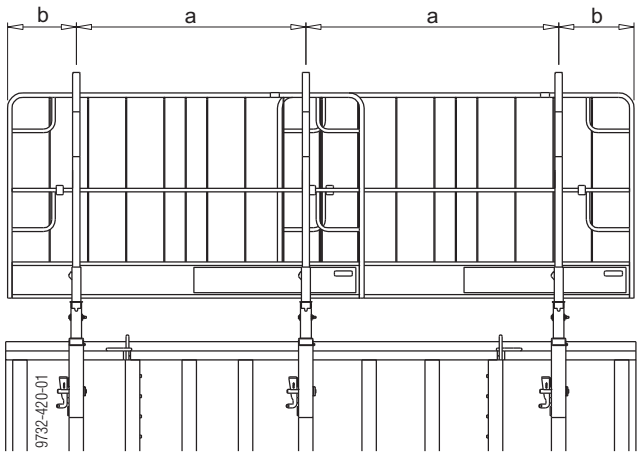


Make sure that the 4-part chain is in the right position:

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

A Form-ply side

Structural design



a ... centre-to-centre span
b ... cantilever

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

Permitted span (a)

		Peak velocity pressure q [kN/m²]			
		0.2	**0.6**	1.1	1.3
Permitted centre-to-centre span	Protective grating XP	**2.5 m**			-
	Guardrail board 2.4 x 15 cm	**1.9 m**			
	Guardrail board 3 x 15 cm	**2.7 m**		2.4 m	2.0 m
	Guardrail board 4 x 15 cm	**3.3 m**		2.4 m	2.0 m

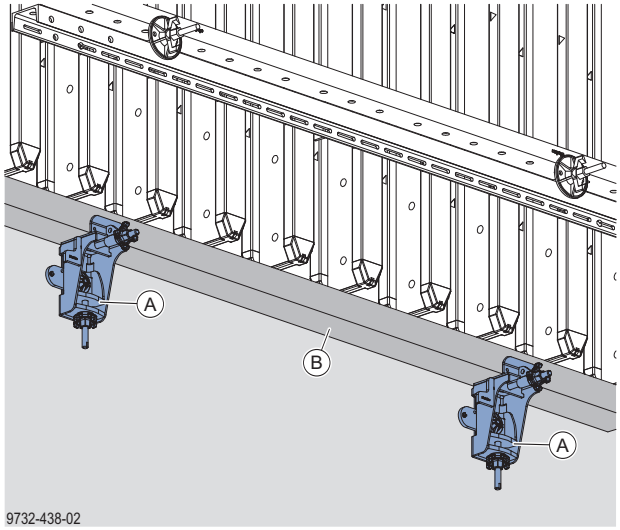
Permitted cantilever (b)

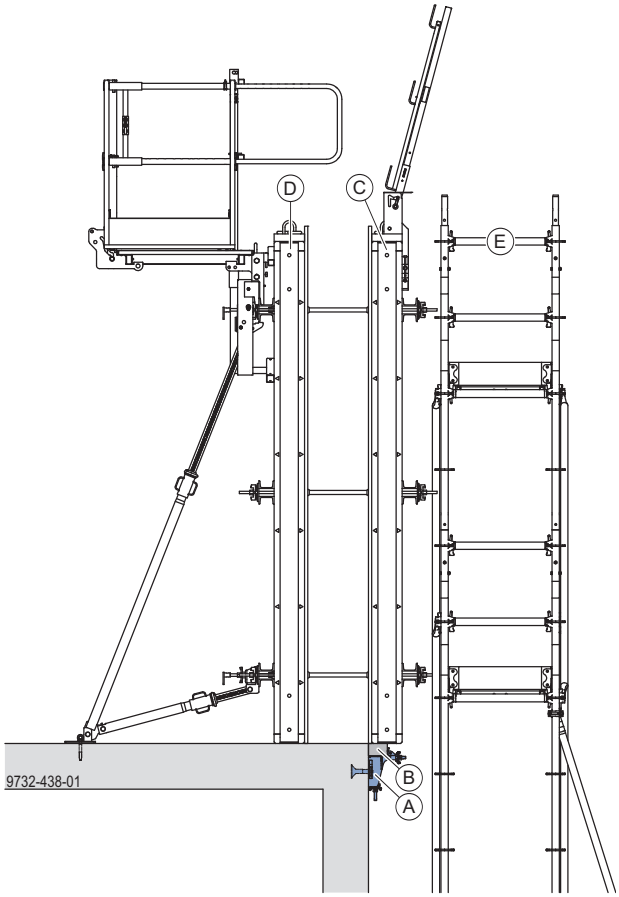
		Peak velocity pressure q [kN/m²]			
		0.2	**0.6**	1.1	1.3
Permitted cantilever	Protective grating XP	**0.6 m**		0.4 m	-
	Guardrail board 2.4 x 15 cm	**0.5 m**			
	Guardrail board 3 x 15 cm	**0.8 m**			
	Guardrail board 4 x 15 cm	**1.4 m**			

Wall formwork at the edge of the structure

Wall-formwork support angle 2G

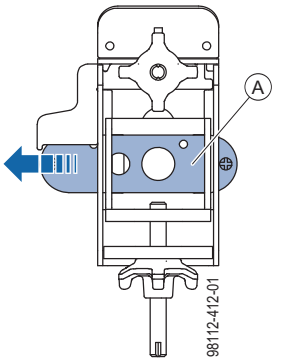
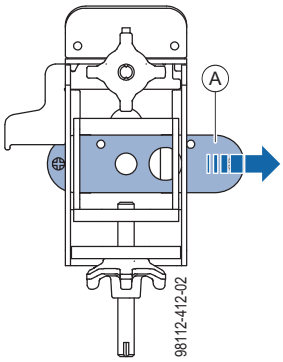
The **Wall-formwork support angle 2G** is used for positioning wall formwork at the edge of the structure if there is no suitable load-bearing base (e.g. platform). It offers a dual function with which the support angle can be secured either with a Bridge edge beam anchor 15.0 or alternative anchorages.





A Wall-formwork support angle 2G
B Bottom plank 120x80 mm (WxH) mounted on the opposing formwork
C Opposing formwork
D Holding formwork
E Façade scaffold

Possible anchorages

Drilled hole with Ø 32.7 mm for Bridge edge beam anchor 15.0	Drilled hole with Ø 21.5 mm for alternative anchorages
	

A Plate for pushing to the respective drilled hole

Drilled hole with Ø 32.7 mm for Bridge edge beam anchor 15.0

	Permissible load-bearing capacity per support angle Wall formwork 2G: (Values apply to uncracked concrete)	
	Concrete strength class: min. C20/25 Cube compressive strength of the concrete during loading: $f_{ck,cube,current}$	
	10 N/mm² (corresponds to B10)	15 N/mm² (corresponds to B15) or higher
Maximum load $F_{permissible}$	16.7 kN	20.0 kN

NOTICE

Installation of the support angle is done by crew members working from the leading façade scaffold!

Note:

A **Bridge edge beam anchor 15.0** has to be set into the concrete when the preceding section is poured so that the support angle can be secured to it.

Follow the directions in the 'Bridge edge beam anchor 15.0' User Information booklet.

Drilled hole with Ø 21.5 mm for alternative anchorage

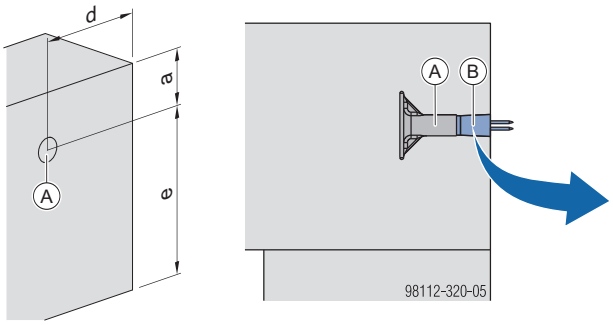
		Maximum load $F_{permissible}$ [kN]			
		5.0	10.0	15.0	20.0
Resulting minimum resistances of the alternative anchorage from the load $F_{permissible}$	Characteristic tensile force $N_{R,k}$	4.5	9.0	13.5	17.9
	Design tensile force $N_{R,d}$	6.7	13.5	20.2	26.9
	Characteristic shear force $V_{R,k}$	5.0	10.0	15.0	20.0
	Design shear force $V_{R,d}$	7.5	15.0	22.5	30.0

NOTICE

- Statical verification is required!
- Installation of the support angle is done by crew members working from the leading façade scaffold!
- The alternative anchorages must be selected not only according to the forces but also according to the compressive strength of the concrete and the minimum distances.

Installation:

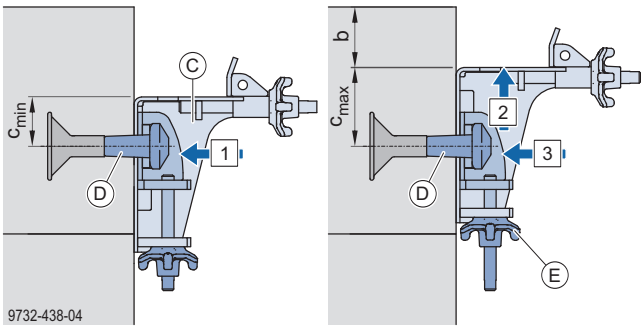
➤ Remove the nailing cone from the bridge edge beam anchor.



a ... min. 15.5 up to max. 19.5 cm
d ... min. 15 cm
e ... min. 45 cm

A Bridge edge beam anchor 15.0
B Nailing cone 15.0

1) Secure the support angle to the bridge edge beam anchor with a Screw-in cone 15.0 (but do not yet tighten).
2) Use the lower vertical star grip nut to adjust to the necessary level **(b)**.
3) Tighten the Screw-in cone 15.0.



b ... 8.0 cm (offset for bottom plank)

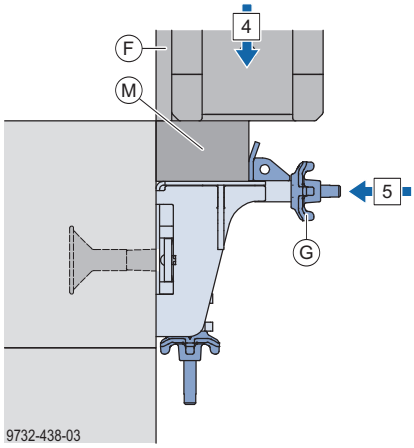
	Bridge edge beam anchor 15.0	Alternative anchorage
c_{min} ...	6.5 cm	6.0 cm
c_{max} ...	11.5 cm	12.0 cm
Max. adjustment range ...	5.0 cm	6.0 cm

C Wall-formwork support angle 2G
D Screw-in cone 15.0
E Star grip nut vertical

Check that the support angle is correctly seated flat against the wall.

4) Place the formwork on the support angle.

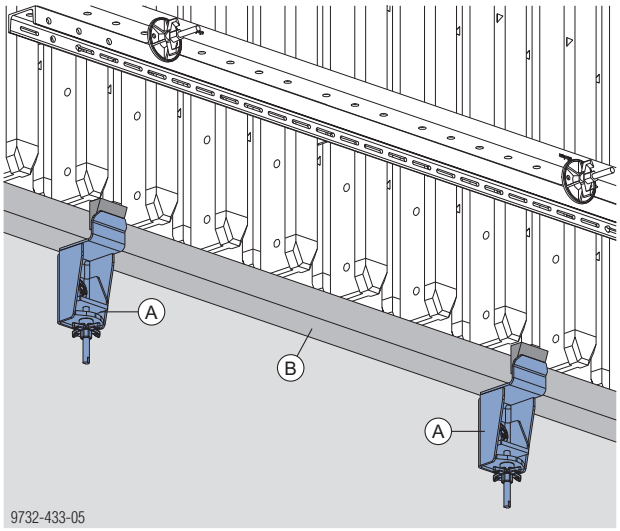
5) Press the formwork against the structure using the upper horizontal star grip nut.

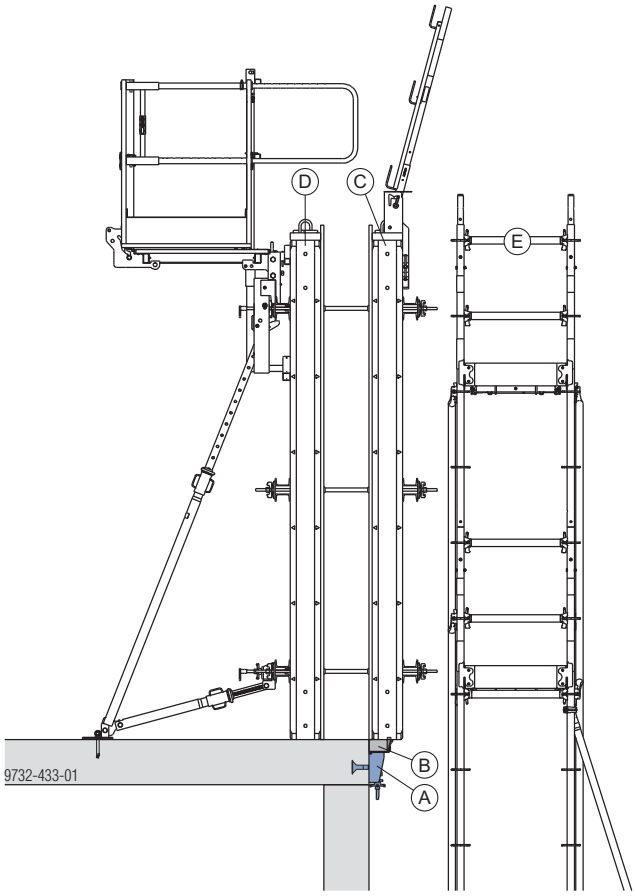


F Formwork
G Star grip nut horizontal
M Bottom plank

Wall-formwork support angle

The **Wall-formwork support angle** is a support for positioning wall formwork at the edge of the structure if there is no suitable load-bearing base (e.g. platform).





A	Wall-formwork support angle
B	Bottom plank 120x80 mm (WxH) mounted on the opposing formwork
C	Opposing formwork
D	Holding formwork
E	Façade scaffold

Drilled hole with Ø 32.7 mm for Bridge edge beam anchor 15.0:

	Permissible load-bearing capacity per support angle Wall formwork: (Values apply to uncracked concrete)	
	Characteristic cube compressive strength of the concrete $f_{ck,cube,existing}$	
	10 N/mm² (C 8/10)	15 N/mm² (C 12/15) or higher
Maximum load $F_{permissible}$	16.7 kN	20.0 kN

NOTICE

- Installation of the support angle and tying of the elements are jobs undertaken by crew members working from the leading façade scaffolding!

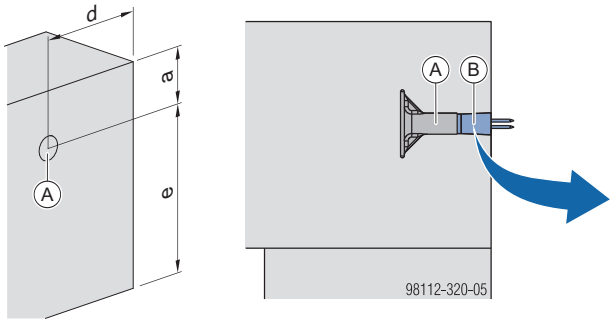
Note:

A **Bridge edge beam anchor 15.0** has to be set into the concrete when the preceding section is poured so that the support angle can be secured to it.

Follow the directions in the 'Bridge edge beam anchor 15.0' User Information booklet.

Installation:

➤ Remove the nailing cone from the bridge edge beam anchor.



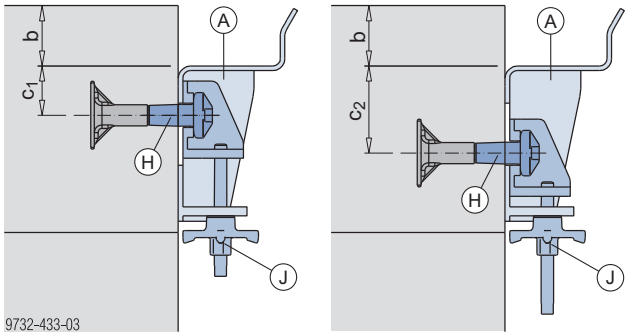
a ... min. 15.5 up to max. 19.5 cm
d ... min. 15 cm
e ... min. 45 cm

A	Bridge edge beam anchor 15.0
B	Nailing cone 15.0

➤ Secure the support angle to the bridge edge beam anchor with a Screw-in cone 15.0 (but do not yet tighten).

➤ Use the star grip nut for adjusting to the necessary level **(b)**.

➤ Tighten the Screw-in cone 15.0.

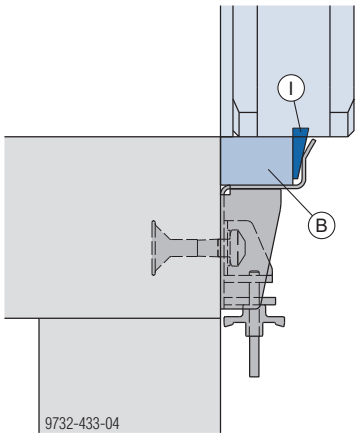


b ... 8.0 cm (offset for bottom plank)
Adjustment range c_1 ... 6.5 cm to c_2 ... 11.5 cm

A Wall-formwork support angle
H Screw-in cone 15.0
J Star grip nut

Check that the support angle is correctly seated flat against the wall.

➤ Position the holding formwork.
➤ Lower the opposing formwork on to the support angle by crane.
➤ Use a wedge to tighten the bottom plank of the opposing formwork against the wall/slab.



B Bottom plank
I Wedge

➤ Fit the anchors.

Before disconnecting from the crane:
➤ Do not disconnect the panel from the crane until a large enough number of form ties have been installed to keep it safely in the upright.

➤ Detach the gang-form from the crane.

Ladder system

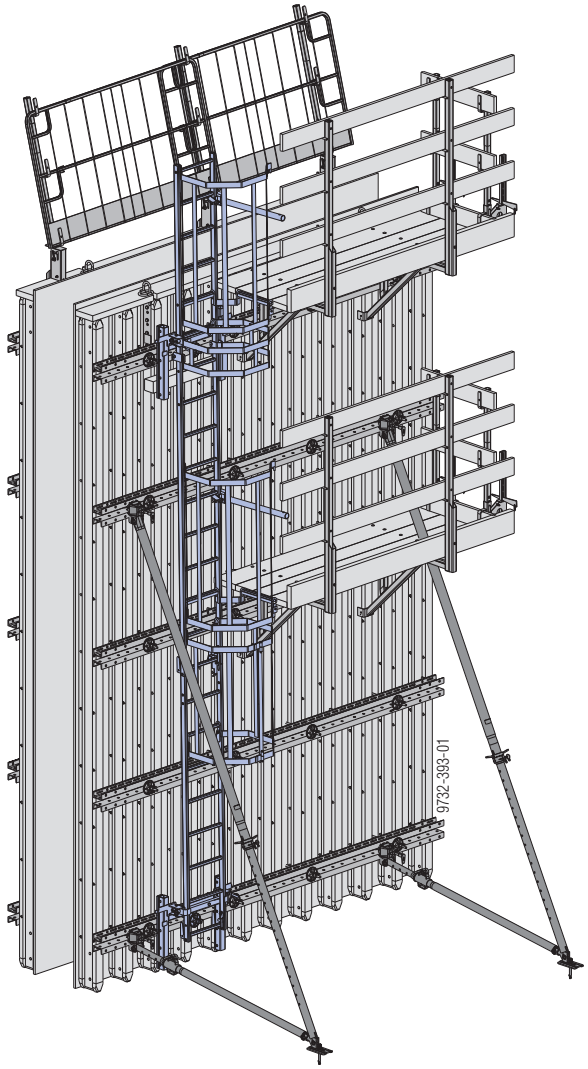
The Ladder system XS permits safe vertical access to and from the intermediate platforms and pouring platforms:

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

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

WARNING

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



Assembly

Preparing the formwork

➤ Pre-assemble gang-forms face-down on a prepared flat area (see the section headed Inter-panel connections).

➤ Install platforms and panel struts on the laid-flat panel (see the sections headed Pouring platforms and Circular formwork).

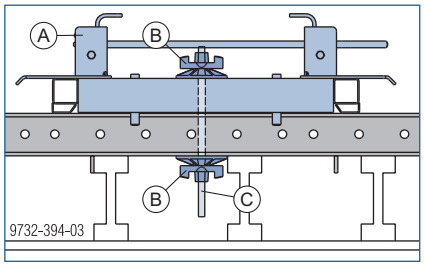
Attaching connectors to the formwork

NOTICE

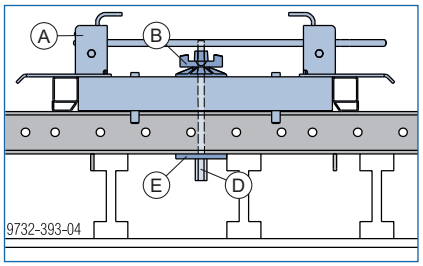
➤ The Ladder system XS is normally mounted inside an element (i.e. not to either side of it).

➤ If this is not possible (e.g. because of a supporting construction frame), then a beam grille (consisting of min. 4 Doka beams) can be attached on one side of the element to make this possible. This also makes it possible to change quickly to another position.

Fastening variant 1:



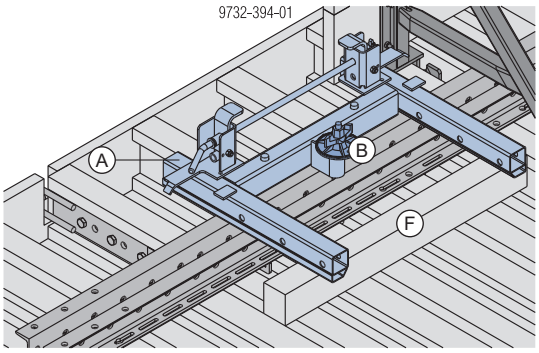
Fastening variant 2:



A	Connector XS wall formwork
B	Super plate 15.0
C	Tie rod 15.0 (length = 0.40 m)
D	Locking rod 15.0 330mm
E	Anchor plate 12/12 or 15/20

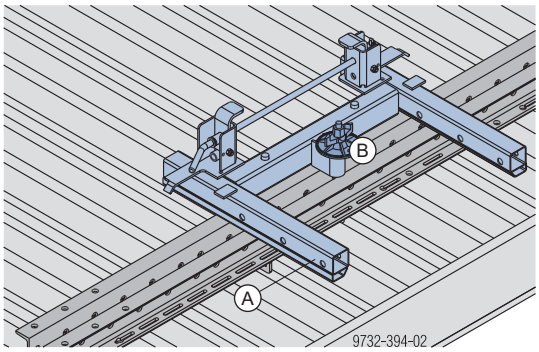
➤ Place the Connector XS wall formwork onto the multi-purpose waling near the top of the formwork and place a squared timber under it (pressure point). Nail the squared timber to the Doka beams.

➤ Secure the Connector XS wall formwork.



A Connector XS wall formwork
B Super plate 15.0
F Squared timber 10x10 cm (site-provided)

➤ Place the Connector XS wall formwork onto the multi-purpose waling near the bottom of the formwork (no need for a squared timber).



A Connector XS wall formwork
B Super plate 15.0

Note:
For formwork heights above 5.85 m, an extra Connector XS wall formwork is required approximately midway up the formwork. This prevents the ladder from swaying when site crew climb up or down.

Fixing the ladder

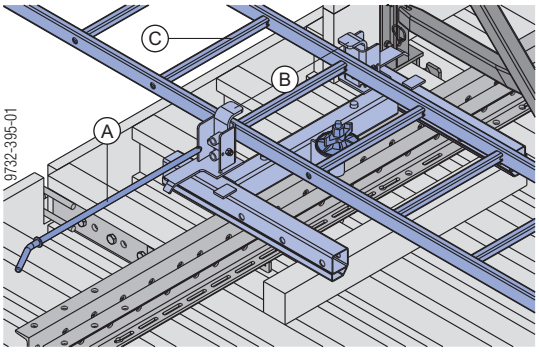
to the top Connector XS Wall formwork

➤ Pull out the push-in bolt, and pivot the two safety hooks out of the way.

➤ Place the System ladder XS 4.40m onto the Connector XS, with the hooking brackets facing downwards.

➤ Close the safety hooks.

➤ Insert the push-in bolt into whichever rung of the ladder is suitable for the height of the formwork, and secure it with a linch pin.



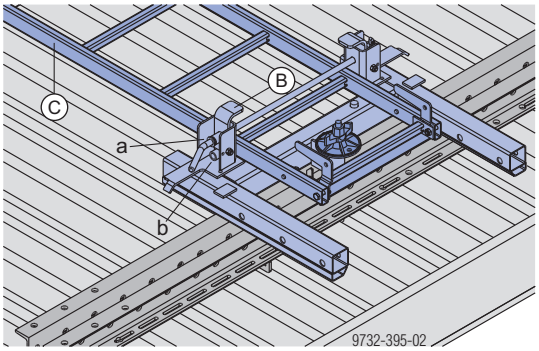
- in the front position (a)

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

to the bottom Connector XS Wall formwork

➤ Pull out the push-in bolt, pivot both safety hooks out of the way, and place the ladder onto the Connector XS.

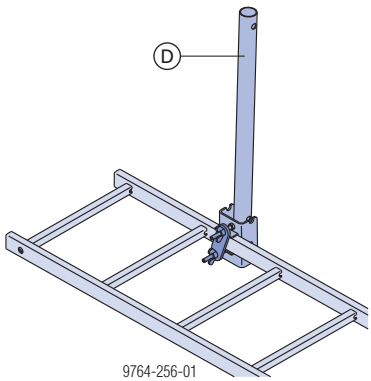
➤ Close the safety hooks, re-insert the push-in bolt and secure it with a linch pin.



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

B Safety hooks
C Ladder XS

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



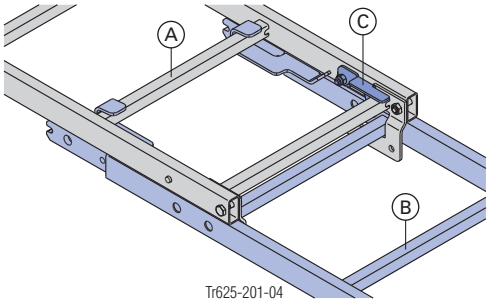
D Securing barrier XS

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

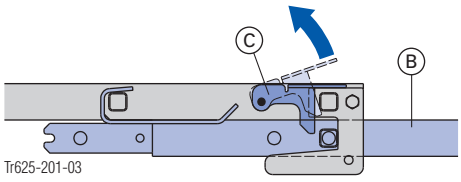
Ladder system XS for heights above 3.75 m

Telescoping ladder extension (for adjusting to ground level)

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



Close-up

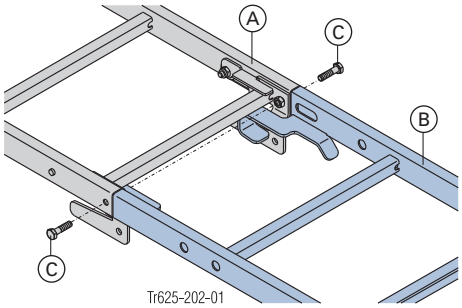


A System ladder XS 4.40m
B Ladder extension XS 2.30m
C Safety latch

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

Permanently fixed ladder extension

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



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

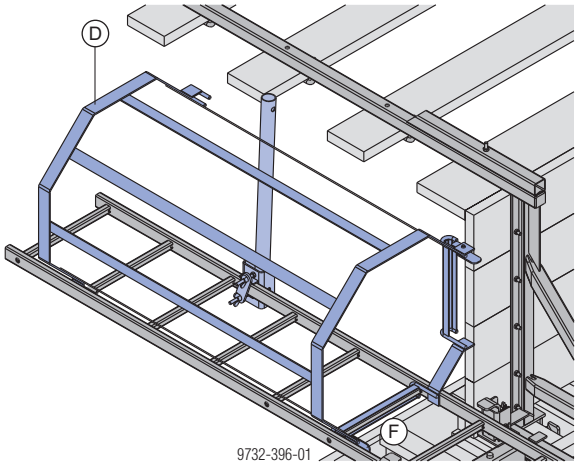
A System ladder XS 4.40m
B Ladder extension XS 2.30m
C Screws, width-across 17 mm

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

NOTICE

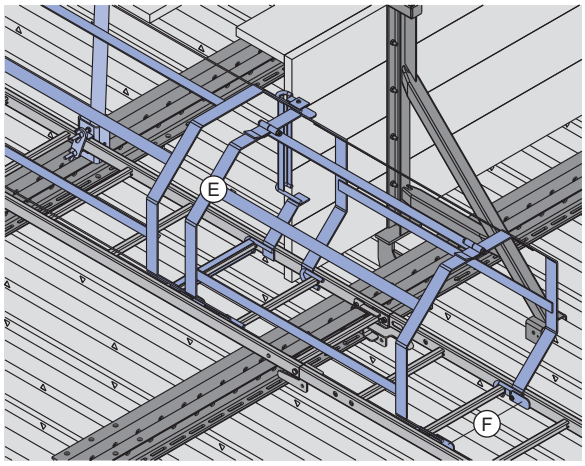
➤ Always observe all relevant safety regulations applying to the use of the Ladder cage XS in the country in which you are operating (e.g. in Germany: BGV D 36).

➤ Attach the Ladder cage exit XS (the bottom of the cage must always be at the same height as the platform). The safety latches prevent the cage from being accidentally lifted out.



D Ladder cage exit XS
F Safety latch

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



9732-393-03

E Ladder cage XS

F Safety latches (lift-out guard)

Items needed

Connectors + ladder	Formwork height		
	2.70-3.25 m	>3.25-6.00 m	>6.00-8.00 m
Connector XS wall formwork	2	2	3
System ladder XS 4.40m	1	1	1
Ladder extension XS 2.30m	0	1	2
Tie-rod 15.0 galvanised ..... m (length: 0.40 m)	2	2	3
Super plate 15.0	4	4	6
Squared timber 10x10 cm	1	1	1

Ladder cage	Formwork height					
	2.70-3.15 m	>3.15-4.05 m	>4.05-5.40 m	>5.40-6.60 m	>6.60-7.65 m	>7.65-8.00 m
Ladder cage exit XS [1]	1	1	1	1	1	1
Securing barrier XS [1]	1	1	1	1	1	1
Ladder cage XS 1.00m [1]	0	1	2	3	4	5

[1] No allowance made here for intermediate exits.

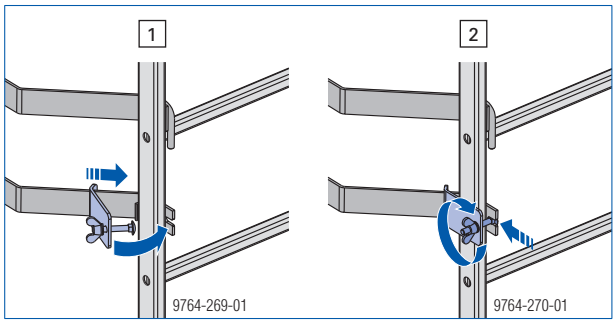
Exit onto an intermediate platform

Basic rule:

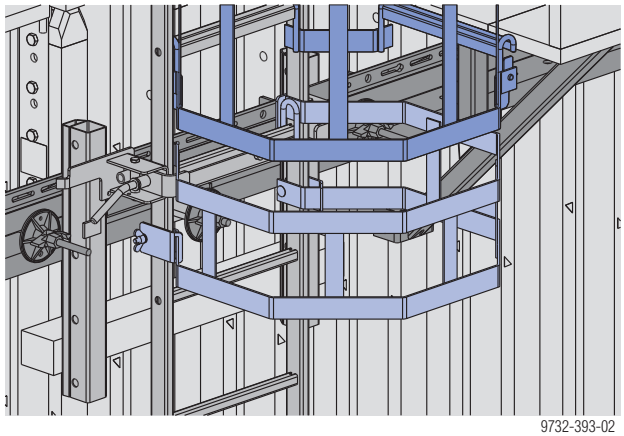
- The number of Connectors XS wall formwork and ladder components is shown in the 'Items needed' table.
- For each additional exit, one Ladder cage exit XS and one Securing barrier XS are required.
- Any over-large openings above the intermediate exit must be reduced with a Ladder cage XS 0.25m.

Mounting the Ladder cage XS 0.25m

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



9764-269-01 9764-270-01



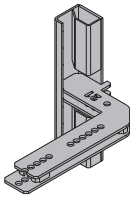
9732-393-02

Combining different formwork systems

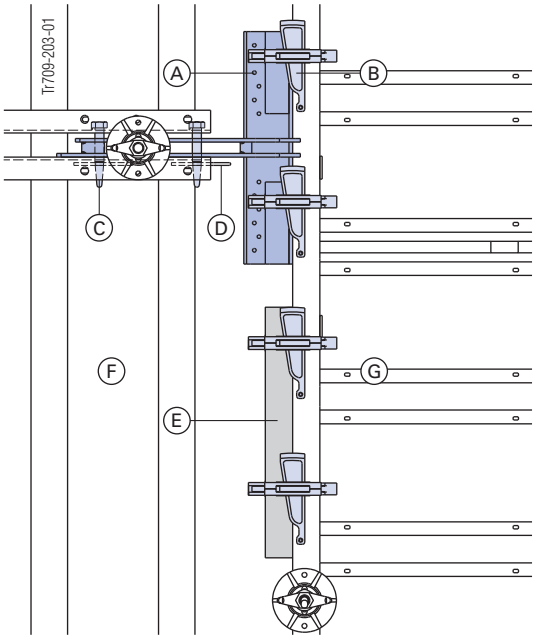
The following formwork systems can be combined with the large-area formwork:

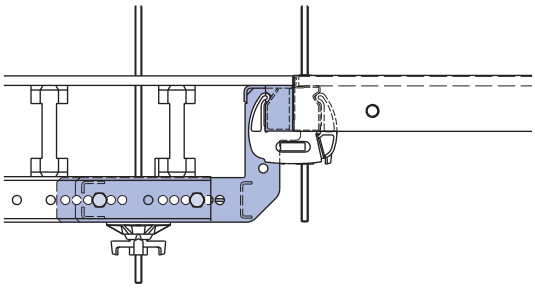
- Framed formwork Framax Xlife
- Framed formwork Alu-Framax Xlife
- Circular formwork H20

The Transition plate 18mm, 21mm or 27mm is needed for this.

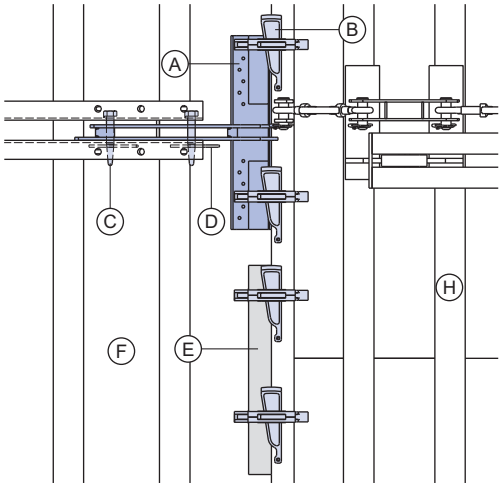


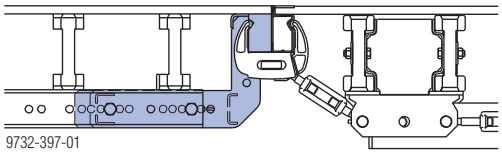
Example of combination with Framed formwork Framax Xlife





Example of combination with Circular formwork H20





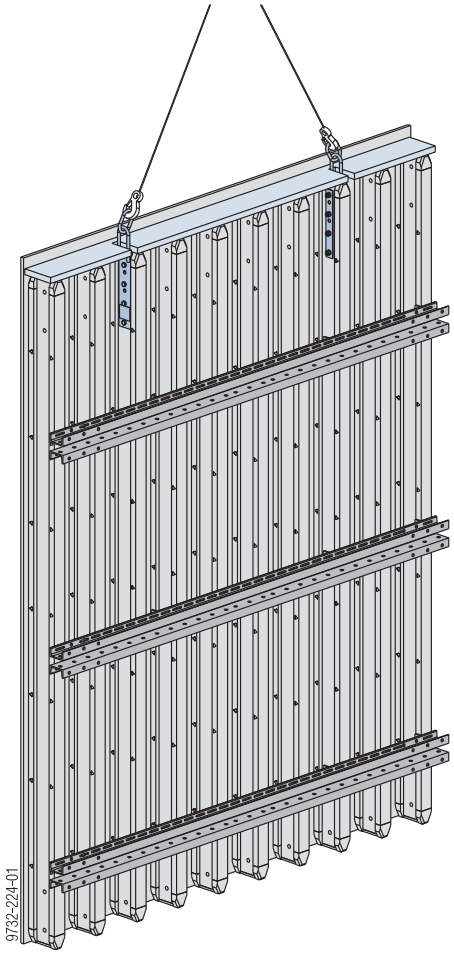
A	Transition plate 18mm, 21mm or 27mm
B	Framax quick acting clamp RU
C	Connecting pin 10cm
D	Spring cotter 5mm
E	Moulded timber support
F	Timber-beam formwork
G	Framed formwork Framax Xlife
H	Circular formwork H20

Can be combined with Wall formwork FF20:

If the spacing of the walings is suitably adjusted, Top 50 elements can be combined with formwork elements FF20. This enables users to supplement the available formwork with existing equipment at short notice.

Lifting by crane

with lifting-brackets and pressure bracing



The crane cables for lifting the elements are fastened to the Lifting brackets. These are bolted onto the webs of the Doka beams.

CAUTION

➤ It is strictly prohibited to lift the formwork without pressure bracing.

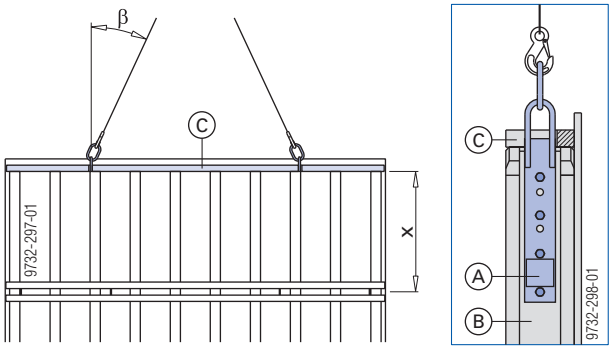
NOTICE

- Angle β of slinging means: max. 30°.
- Brace the formwork in a windproof manner when erecting it or when it is temporarily placed in the standing position.

Follow the directions in the Operating Instructions.

Permissible working load limit:

- 1300 kg per lifting bracket for waling centre-to-centre spacing x less than 0.75 m
- 1000 kg per lifting bracket for waling centre-to-centre spacing x 0.75 to 1.00 m

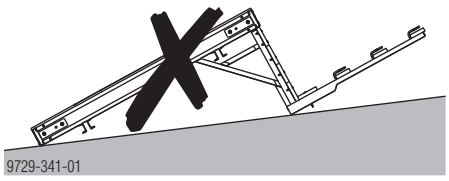


A	Lifting bracket
B	Doka beam
C	Pressure bracing (plank, 4.5x20 cm)

For instructions on installing the lifting brackets and pressure bracing (top plank), see section Element assembly.

However, for your own safety, please observe the following points:

- Only set down the elements, or stack of elements, on flat surfaces that are capable of supporting the load.
- Do not detach an element from the crane until it has been safely set down.
- Never climb onto the stack of elements.
- Never set down the units in such a way as to impose loads on platforms and brackets.



Enhanced requirements for fair-faced concrete

Examples of enhanced requirements:
- Architectural requirements
- Special requirements regarding planeness of the concrete surface

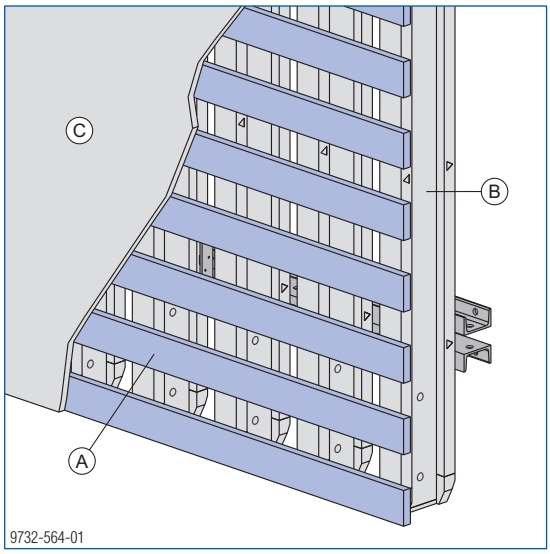
For more information, see the 'Forming fair-faced concrete' User Information booklet.

Formwork sheets screwed on from rear

Advantages:
- High-grade concrete surfaces can be formed, without any screw imprints.
- Less finishing-work needs to be done on the concrete surfaces.
- The surfaces of the formwork sheets can easily be cleaned.

There are **two possible ways** of fixing the formwork sheets to the Doka beams:
- **Open formwork**
  - gives the elements high rigidity
  - flange-clamps can be retrofitted
  - for long construction periods
- **H20 screw-on brackets for formwork sheets**
  - no swelling
  - rentable
  - for short construction periods

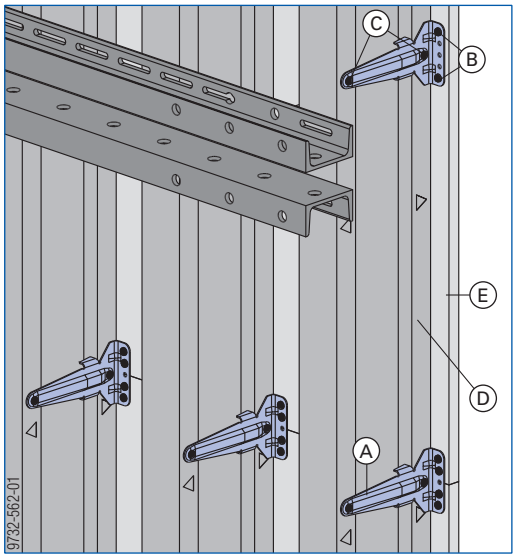
Open formwork



A Open formwork
B Beam grille
C Formwork sheet

H20 screw-on bracket for formwork sheets

The H20 screw-on bracket for formwork sheets makes it possible to fix formwork sheets to Doka beams from the backside.



A	H20 screw-on bracket for formwork sheets
B	Framax screw 6.7x20.6 (article n° 508302100)
C	Universal countersunk-head screw Torx TG 5x50
D	Doka beam H20
E	Formwork sheet

Advantages:

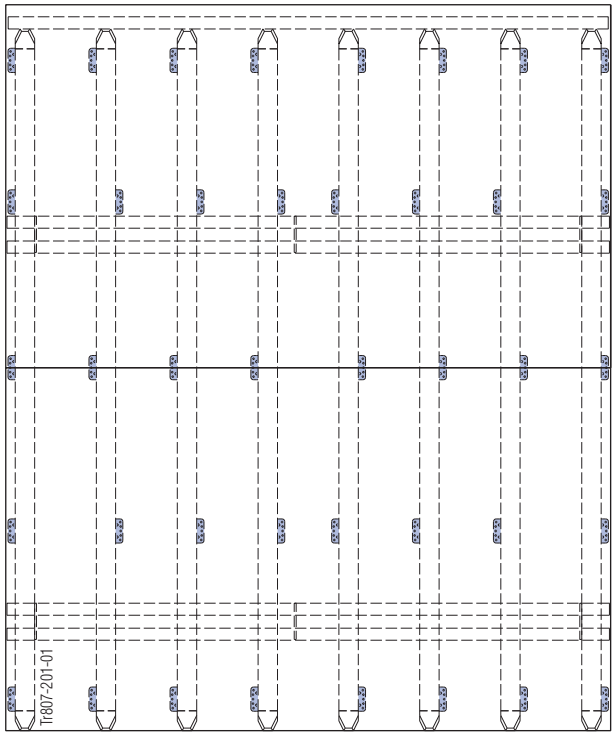
- Can be used with various different thicknesses of formwork sheet, from 18 to 27 mm.
- Can be dismounted quickly, leaving no damage.

NOTICE

- On 18 mm thick sheets, the brackets can only be used together with an extra 3 mm thick packing strip (otherwise the screws might protrude on the other side of the sheet).
- While being screwed onto the H20 screw-on brackets for formwork sheets, the formwork sheet must be secured against being lifted off the beams.

Approx. five H20 screw-on brackets for formwork sheets per m² are needed for attaching the formwork sheeting.

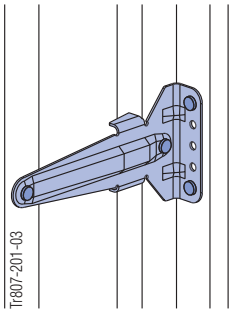
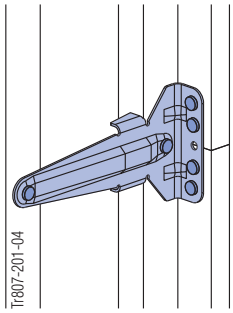
Practical example



Bolts required per H20 screw-on bracket for formwork sheets:

Type of formwork sheet	Framax screw 6.7x20.6 (on formwork sheet)	Universal countersunk-head screw Torx TG 5x50 (on formwork beam)
Multi-ply formwork sheet (Dokaplex or equivalent)	2 (In the middle of the sheet) 4 (At joints between sheets)	2
3-ply sheet (3-SO or equivalent)	4	2

Attachment of multi-ply formwork sheet:

In the middle of the sheet	At joints between sheets
	

Permitted pull-out force per Framax screw 6.7x20.6

Type of formwork sheet	Screw-in depth	Permitted pull-out force [1]
Multi-ply formwork sheet (e.g. Dokaplex 18 or 21mm)	15 mm	0.5 kN
3-ply sheet (e.g. 3-SO 21 or 27mm)	18 mm	0.2 kN

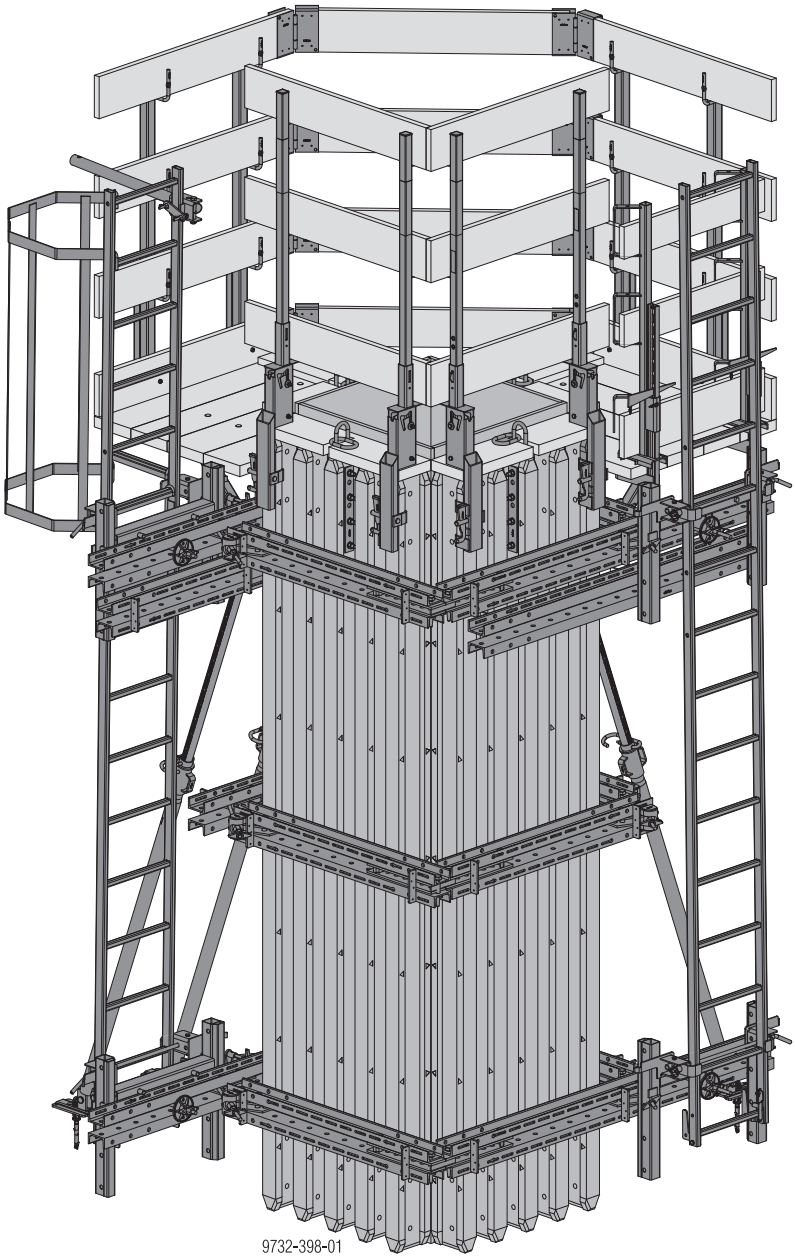
[1] Values obtained when sheet was in moisture-penetrated state

Other possible areas of use

Column formwork Top 50

The proven Doka beams, multi-purpose walings and Doka formwork sheets are also used for column formwork.

- Cross-sections continuously adjustable up to 120 x 120 cm
- No form ties through the column
- Clean, smooth concrete surfaces
- Easy assembly and handling



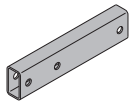
Follow the directions in the 'Column formwork Top 50' User Information booklet.

Top 50 as a superstructure and tunnel formwork

The modular system of the Doka large-area formwork Top 50 opens up a huge range of uses - from straightforward wall formwork all the way up to tunnel formwork travellers and bridge superstructure formwork.

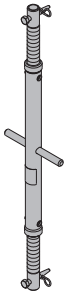
The Doka large-area formwork is adapted using the following additional components:

- **Universal support Top50** – This is a special support plate for joining the multi-purpose walings together. It is custom-made on a project-specific basis.



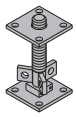
- Together with the multi-purpose walings, **Universal struts Top50** and **spindle struts** are used to make trussed bearing elements for bridges or large-area travelling formworks.

  For more information, see section Struts.

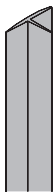


- **Universal spindle foot T8** for transferring vertical compressive forces of up to 80 kN.

  Not suitable for tensile loads!

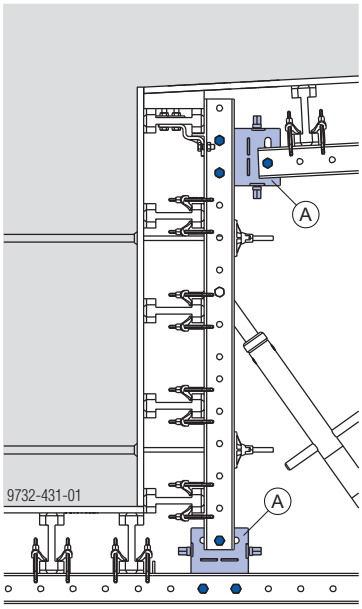


- The **T ledge 21/42 2.00m** is a plastic ledge for covering up stripping cracks.



Adjusting plate T

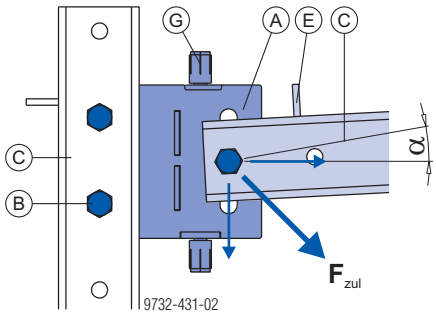
The Adjusting plate T enables stepless height and angle adjustments of Top50 elements, for example for bridge superstructures.



NOTICE

Make sure that the connection plate on the multi-purpose waling does not collide with the Adjusting plate T!

Multi-purpose waling WS10 and WU12 in detail



α ... max. 23°

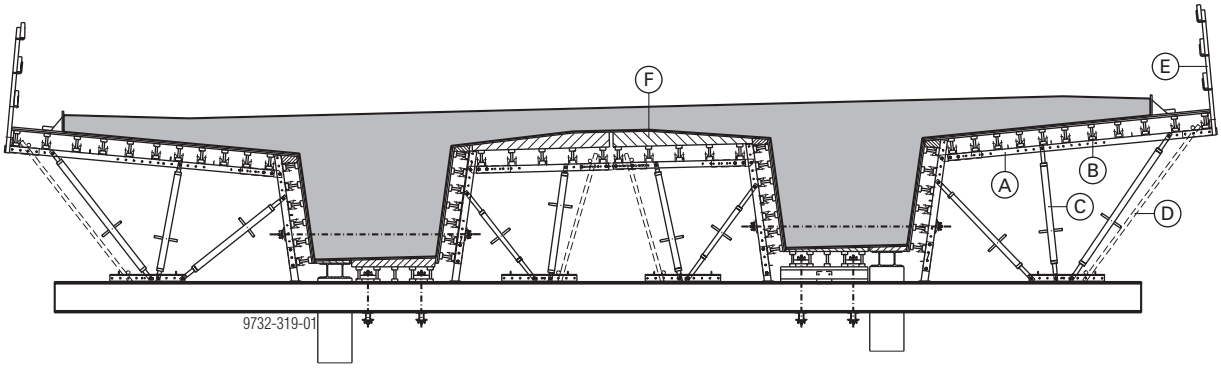
A	Adjusting plate T
B	Connecting pin 10cm + Spring cotter 5mm
C	Multi-purpose waling WS10 and WU12
E	Connection plate of multi-purpose waling
G	Spindle, width-across 24 (max. adjusting range 107 mm)

$F_{permissible}$ = 37 kN

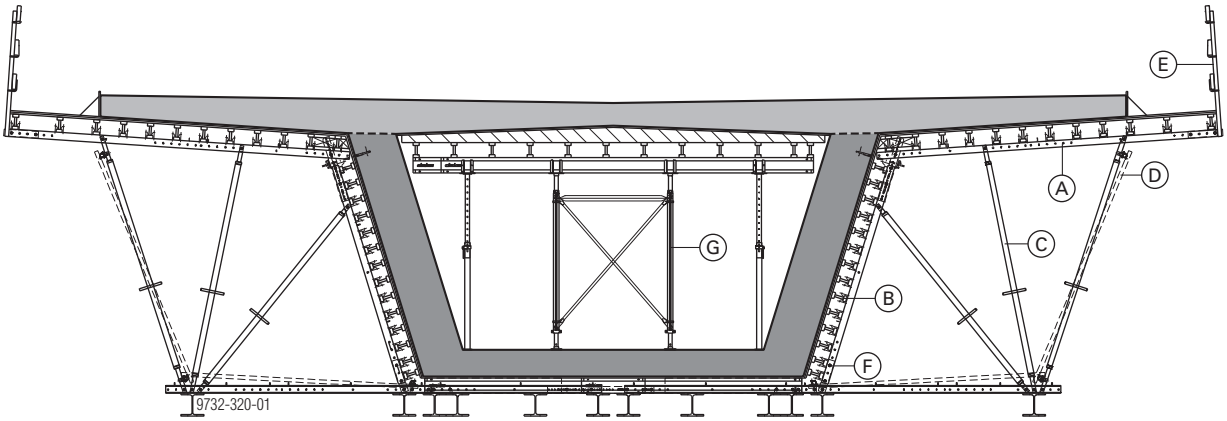
Tools needed for operating the spindle:

- Reversible ratchet 1/2"
- Box nut 24 1/2"

Bridge superstructure formwork

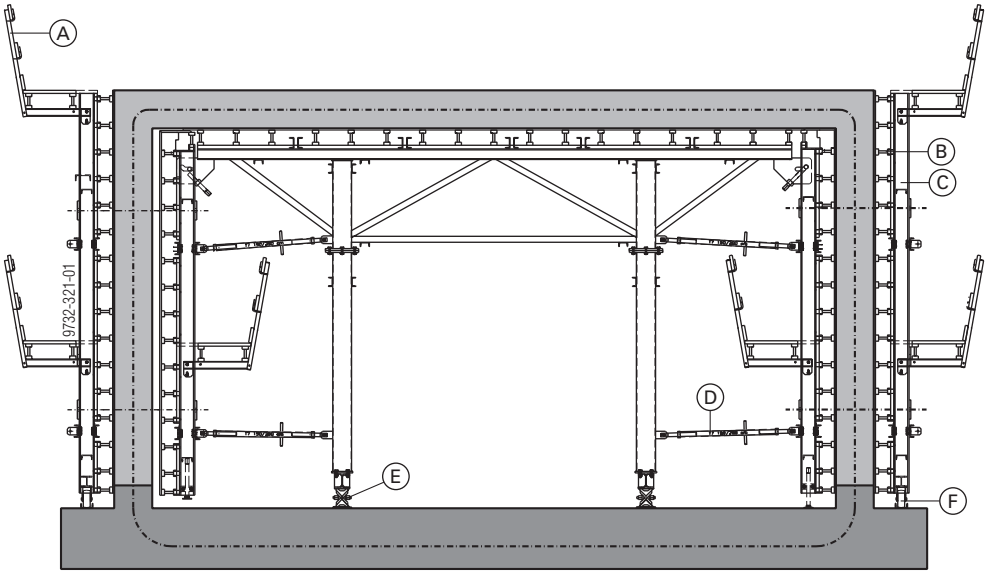


A	Multi-purpose waling
B	Doka beam
C	Spindle strut
D	Bracing
E	Handrail post T 1.80m
F	Profiled timber former

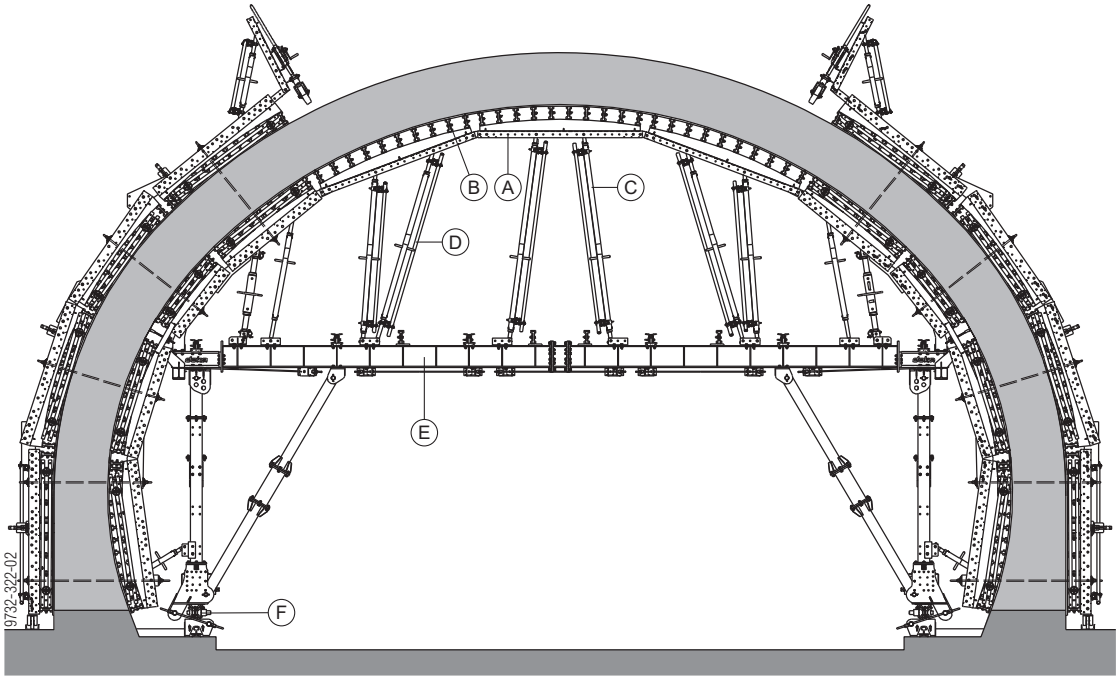


A	Multi-purpose waling WS10 Top50
B	Doka beam
C	Spindle strut
D	Bracing
E	Handrail post T 1.80m
F	Universal support Top50
G	Doka load-bearing tower Staxo

Tunnel formwork



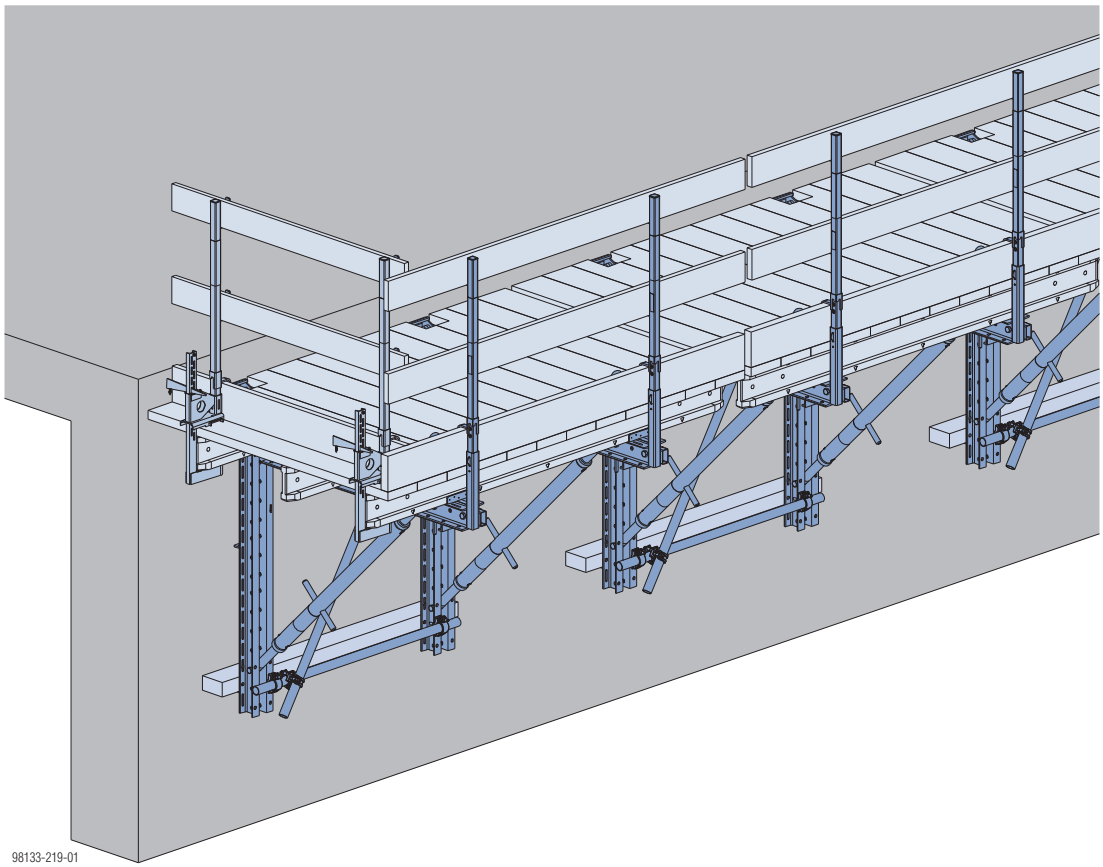
A Screw-on access bracket
B Doka beam
C I-beam
D Spindle strut
E Lowering wedge
F Armour-plated roller



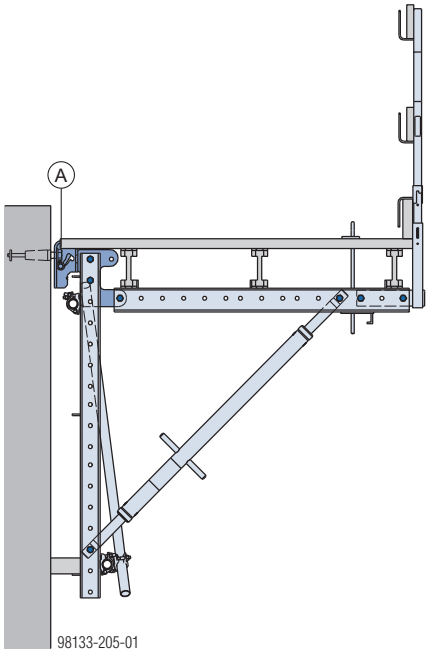
A Multi-purpose waling
B Doka beam
C Spindle strut
D Bracing
E e.g. Tunnel system DokaCC
F Lowering wedge

Platforms assembled from system components with Universal suspension head

Easy to use and versatile. With the Universal suspension head and the Doka system components, platforms can be perfectly adapted to widely differing project requirements. The area of application of the Universal suspension head extends from applications in simple storage and working platforms, pouring platforms and bridge edge beam brackets for vertical walls to customer applications for inclined structures or narrow shafts.



Practical example:

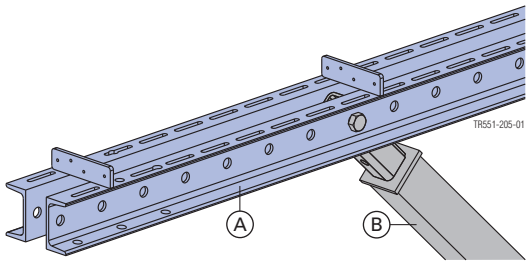


A Universal suspension head

Follow the directions in the 'Platforms assembled from system components' User Information booklet.

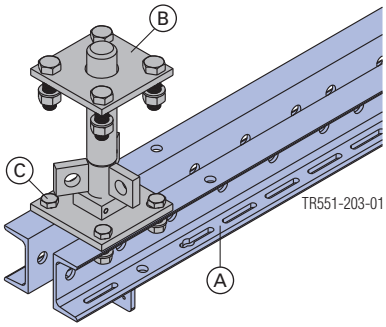
Possible ways of connecting to the multipurpose waling

Connected to a spindle or strut along a continuous hole-grid.



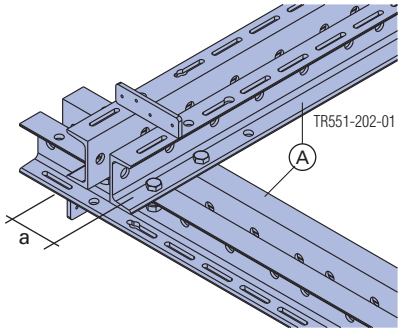
A Multi-purpose waling WS10 Top50
B Strut

Connected to a Universal spindle foot T8



A Multi-purpose waling WS10 Top50
B Universal spindle foot T8
C Hexagonal bolt M16x45 with hexagon nut and washer (not included with product)

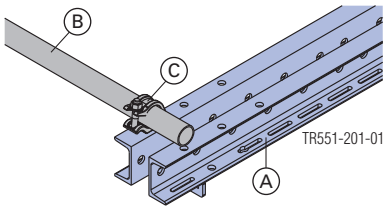
Bolted together at right-angles via the rear-located flange holes



a ... 113±2 mm
Where the walings are bolted together one across the other, using 4 bolts, we recommend using hexagonal bolts M12x45 and n° 13 limpet washers. If hexagonal bolts M16x45 are needed, we recommend planning to assemble the element on an assembly bench.

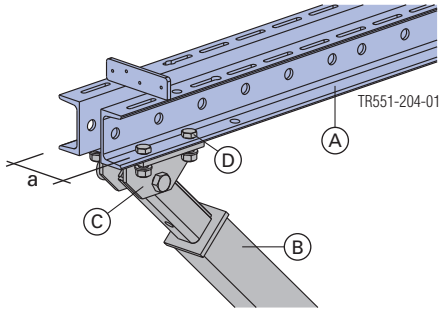
A Multi-purpose waling WS10 Top50

Connected to bracing tubes by screw-on couplers



A Multi-purpose waling WS10 Top50
B Bracing tube
C Screw-on couplers

Connected to a spindle or strut via an adapter and the rear-located flange holes



a ... 113±2 mm
Where the connection is made via a plate, allowance should be made for the axis tolerance of 113 ±2 mm in the transverse direction. We recommend planning for slotted holes (18x20 mm) in the transverse direction.

A Multi-purpose waling WS10 Top50
B Strut
C Adapter (special component - project-specific)
D Hexagonal bolt M16x45 with hexagon nut and washer

Forming self-compacting concrete (SCC)

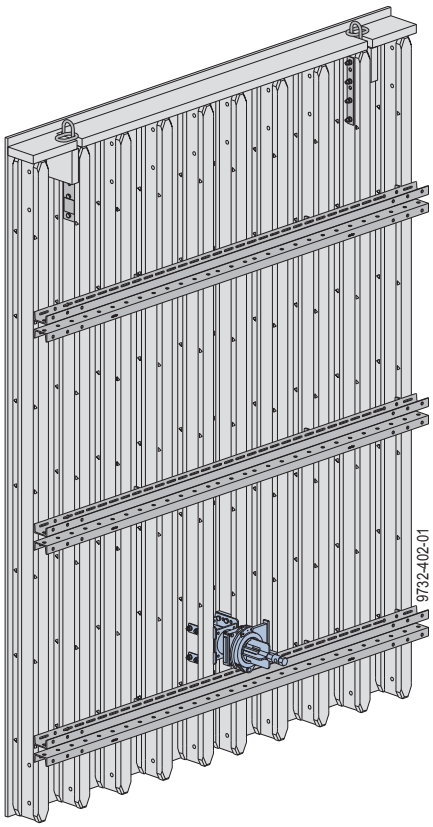
The **Filler neck GF SCC** enables Top 50 formworks to be filled with self-compacting concrete (SCC).

NOTICE

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

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

Practical example



Element assembly

To optimise the concrete finish and to ensure that the Doka large-area formwork Top 50 functions at its best, the elements must be assembled correctly and precisely.

Doka beams and walings are quickly assembled into finished elements, using simple connecting devices - either on-site or by the Doka Pre-assembly Service.

Note:

Avoid water-soaked beams.

Dry beams enable precise installation and ensure stable bolted joints between beams and walings.

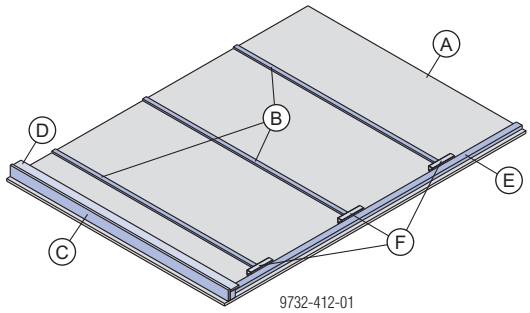
Assembly bench with stop bars

There must be a flat assembly bench within reach of the crane, for assembling the formwork elements on.

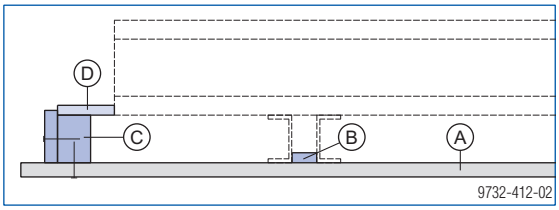
➤ Attach the end stop-bar for the Doka beams.

➤ Nail on the stop-bars for the multipurpose walings (as per the prescribed spacing of the walings).

➤ Attach the end stop-bar for multipurpose walings.



9732-412-01



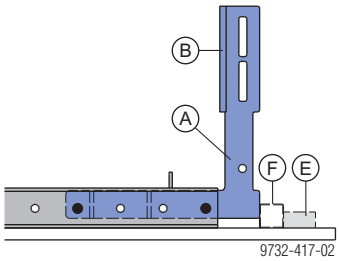
9732-412-02

A	Assembly bench
B	Stop-bar for multipurpose walings
C	End stop-bar for Doka beams
D	Detachable spacer batten
E	End stop-bar for multipurpose walings
F	Squared tube 60x60x300mm

Removing the detachable spacer batten makes it possible to mount e.g. a bottom plank without having to move the element first.

Placing the walings

➤ Use pins to fix Assembly angles Top50 into the multipurpose walings (the multipurpose walings with connection plates facing upwards).
The assembly angles are used to ensure exact alignment of the Doka beams, and as stop-bars for the formwork sheets.

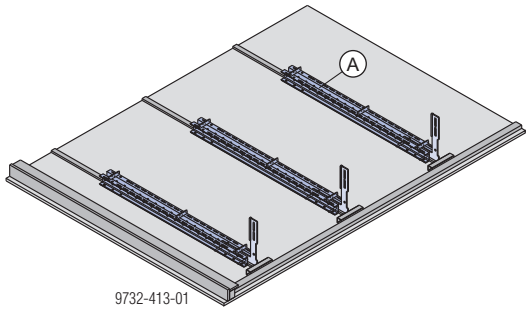


9732-417-02

A	Assembly angle Top50
B	Stop-bar for formwork sheets
E	End stop-bar for multipurpose walings
F	Squared tube 60x60x300mm

➤ Clean the assembly bench.

➤ Place the multipurpose walings, complete with the mounted assembly angles, onto the assembly bench.



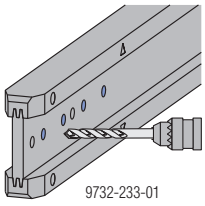
9732-413-01

A	Multi-purpose waling

Use nails to prevent the walings sliding off.

Drilling extra holes in Doka beams

➤ Prepare the required number of Doka beams with such extra holes as are needed. Extra holes must be drilled for lifting brackets, Universal brackets, Top scaffold brackets and stacking-plates.


9732-233-01

We recommend a carbide-tipped bit for drilling through the Doka beam H 20 P.

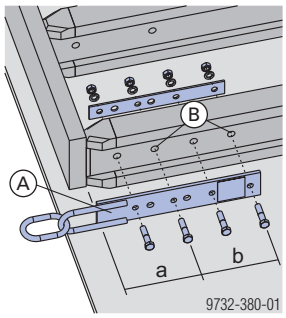
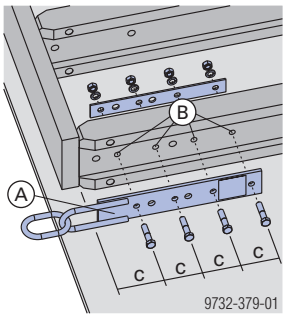
Mounting the lifting brackets

WARNING

➤ Doka beams which have lifting brackets mounted to them must be attached to the multi-purpose walings by means of threaded joints or flange clamps.

Simply nailing them only to the connection plate is not sufficient.

➤ Bolt the lifting bracket into 4 drilled holes.
Tools needed: Reversible ratchet 1/2", Box nut 24, Fork spanner 24

Distance of outermost hole from edge of beam	
9 cm	5 cm
	

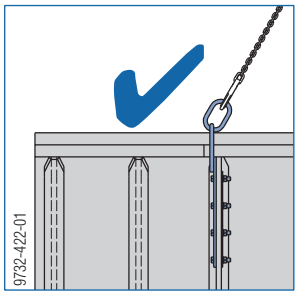
a ... 20.0 cm
b ... 22.4 cm
c ... 11.2 cm

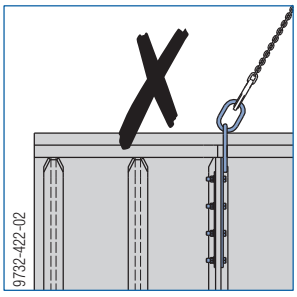
A Lifting bracket

B Extra diam. 18 mm holes

NOTICE

Be careful to ensure that the lifting brackets are mounted in the correct position!

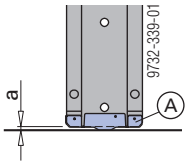




Follow the directions in the Operating Instructions.

Extra protection for the bottom ends of Doka beams H20 eco

➤ Fasten on a Protective cap H20 with nails 3.4x50. Instead of the protective caps, a bottom plank can be fitted (see section Mounting a bottom plank).

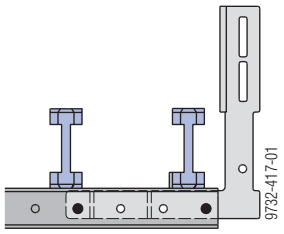


a ... 1.0 cm

A Protective cap H20

Placing and attaching the Doka beams

➤ Fasten on the Doka beams at the desired centres.



Various ways of fastening the Doka beams

	WS10	WU12	WU14	WU16
Flange clamp H20	✓	✓	—	—
Flange clamp G	✓	✓	✓	✓
Flange claw	✓	✓	✓	✓
Fastening plate	✓	✓	✓	—
Waling clamp 2G	✓	✓	✓	—
Waling clamp H20	✓	✓	✓	—
Beam screw S 8/70	✓	✓	✓	✓
Beam screw H 8/70	✓	✓	✓	—

Flange-clamp H20

– for fastening the Doka beam H20 anywhere on the multi-purpose waling.

NOTICE

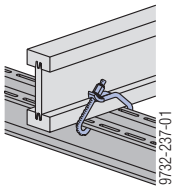
When using the Flange clamp H20, make sure that a **space of at least 5 cm** is left between the **form tie** and the **Doka beam**.

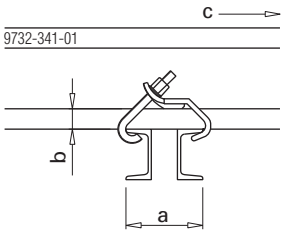
Tools needed:

- Reversible ratchet 1/2"
- Box nut 19 1/2" L
- Extension 22 cm

➤ Push the Flange clamps H20 onto the Doka beams.
➤ Before tightening them to the steel waling, make sure that they are centrically positioned.
➤ Gently tighten on one side. Tap the stirrup with a hammer to ensure that the clamp is sitting correctly.
➤ Tighten the clamp on the other side and tap the stirrup with the hammer.

➤ Tighten the first side of the clamp completely.





a ... 13.5 - 16.5 cm
b ... 4.0 cm
c ... Bottom of the formwork

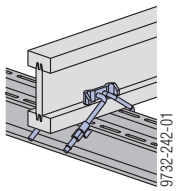
Mount the flange clamps with the hexagon nuts facing downwards (towards the bottom of the formwork). This protects the nuts against soiling during pouring.

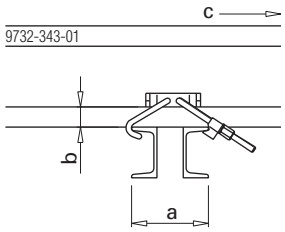
Flange-clamp G

For fastening the Doka beam anywhere on the waling. Can also be used on steel girders such as I-girders etc.

Note:
First push the flange-clamps onto the Doka beam, and only then place the Doka beam onto the waling.

Tools needed:
- Reversible ratchet 1/2"
- Box nut 19 1/2" L





c ... bottom of formwork

Clamping ranges [cm]

b	0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
a_{min}	15.8	15.8	15.0	14.5	13.4	13.2	13.0	13.0	12.8
a_{max}	23.8	23.3	23.2	22.7	22.3	21.9	21.3	20.7	20.0

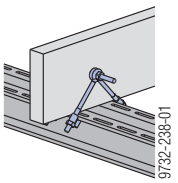
Clamping ranges [cm]

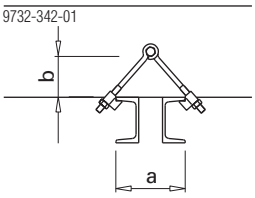
b	4.5	5.0	5.5	6.0
a_{min}	12.3	11.5	11.8	12.0
a_{max}	19.3	18.2	16.8	14.6

Flange claw

Also for subsequent fastening of Doka beams or squared timbers to any position on walings and (IPB-section) steel girders.

Tools needed:
- Drill bit, diam. 17 mm
- Reversible ratchet 1/2"
- Box nut 19 1/2" L





Clamping ranges [cm]

b	0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
a_{min}	17.3	17.1	17.0	16.7	16.3	16.0	15.5	14.8	14.2
a_{max}	29.0	28.9	28.8	28.7	28.6	28.4	28.1	27.7	27.4

Clamping ranges [cm]

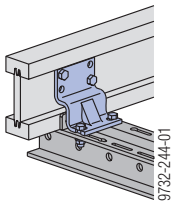
b	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
a_{min}	13.4	12.5	11.4	10.1	10.0	10.0	10.0	10.0	10.0
a_{max}	27.1	26.7	26.0	25.5	25.1	24.4	23.7	23.0	22.2

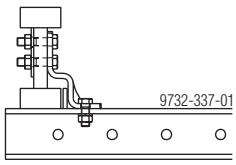
Fastening plate

For formwork elements intended for high numbers of repeat uses, or for providing stiffening reinforcement and for transferring longitudinal forces.

Can only be screwed onto the ends of the waling (in the case of walings of 1.00 m and above), to the left or right of the connection plate, in the flanges.

Tools needed:
- Drill bit, diam. 17 mm
- Reversible ratchet 1/2"
- Box nut 24 1/2"
- Fork spanner 24





Double-headed nails 80mm

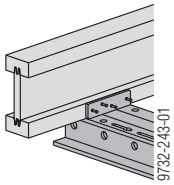
WARNING

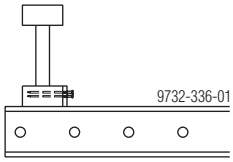
➤ Doka beams which have lifting-brackets mounted to them must be attached to the multipurpose walings by means of threaded joints or flange-clamps.

Simply nailing them only to the Connection plate is not sufficient.

The connection plates serve as stop-bars for the edge beams and can also be used for fixing the beams in place.

Fasten the Doka beam to the connection plate with 4 double-headed nails.





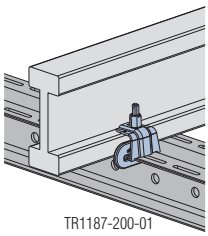
Waling clamp 2G

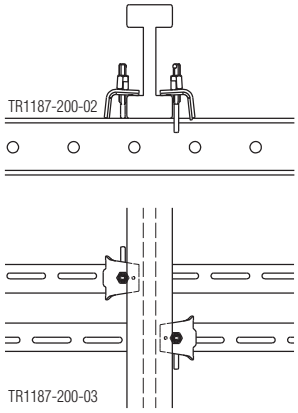
For clamping the Doka beam at any point along the multi-purpose waling, independently of the waling's hole-grid. Subsequent installation of beam and waling possible.

Tools needed:

- Reversible ratchet 1/2"
- Box nut 19 1/2" L
- Extension 22cm

Tightening torque: 50 Nm



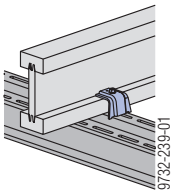


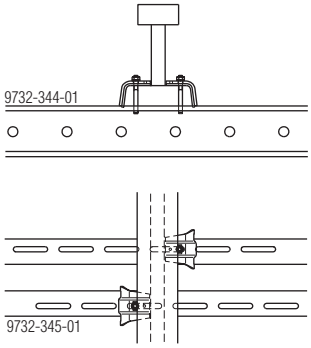
Waling clamp H20

For clamping Doka beams anywhere on the waling. Subsequent installation of beam and waling possible.

Tools needed:

- Reversible ratchet 1/2"
- Box nut 13 1/2"



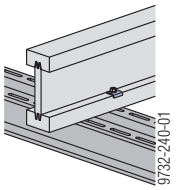


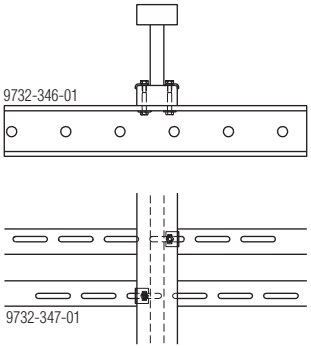
Beam screw S8/70

- for screwing Doka beams H20 anywhere onto the Multi-purpose waling.

Tools needed:

- Drill bit, diam. 10 mm
- Fork spanner 13/17





Beam screws H8/70

- for screwing any type of Doka beam to any point on the waling. The hammerhead is for slotting into the oblong holes in the waling.

Positioning rail with hole gauge Top50

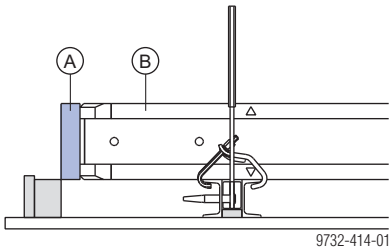
This speeds up the work of assembling the elements where beam-screws are being used between the Doka beams and the walings. The hole-gauge plates can be steplessly adjusted in line with the required spacing between the beam-screws.

Mounting a bottom plank

As an alternative to the Protective cap H20, a bottom plank can also be fitted to the bottom ends of the Doka beams.

➤ Remove the detachable spacer batten from the assembly bench.

➤ Fasten the bottom plank to each beam-flange using a 3.1x90 nail.



A Bottom plank

B Doka beam

Mounting the top plank (pressure bracing)

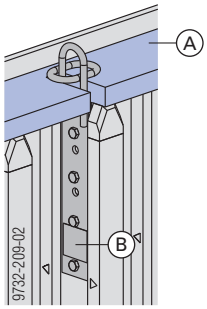
DANGER

➤ There must always be a pressure bracing between the Lifting brackets.

➤ The gap between the two Lifting brackets must be firmly braced, without any play, to prevent any oblique pull being applied to the Doka beams.

This means that the recesses must be profiled very precisely into the web of the beam.

➤ Fasten the top plank (pressure bracing) to each beam-flange using a 3.1x90 nail.



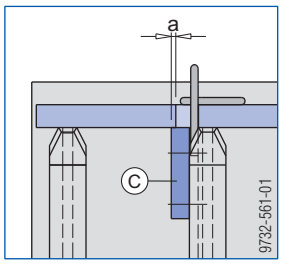
A Top plank (pressure bracing)

B Lifting bracket

CAUTION

➤ If the lifting bracket is mounted on the 2nd beam from the outside, the top plank must be supported where it has been recessed.

➤ Nail a supporting board onto the formwork beam.

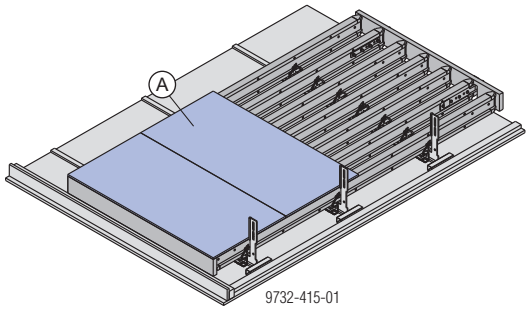


a ... min. 10 mm (minimum support surface)

C e.g. 200x200 mm board

Fixing the formwork sheets

➤ Place the formwork sheets up against the assembly angles and nail them onto each Doka beam. Make sure that the grain of the face layer runs at right angles to the supports (i.e. to the Doka beams).

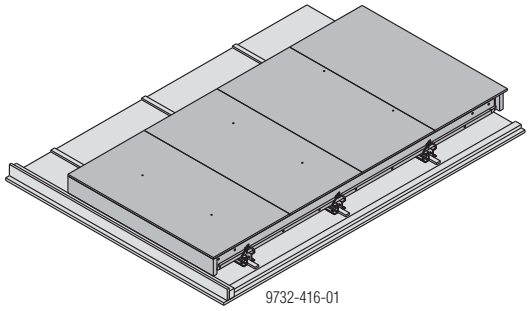


A Doka formwork sheet

The Strip tensioner B 6.00m presses the joints between the sheets tightly together prior to fixing.

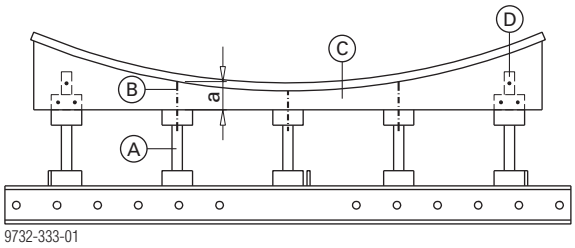
Drilling the form-tie holes

➤ Drill as specified in the formwork plan.
Form-tie system 15.0: Ø 20 mm
(can be sealed with Universal plug R20/25)
Form-tie system 20.0: Ø 24 mm
➤ Seal cut edges, and around holes, with edge varnish.

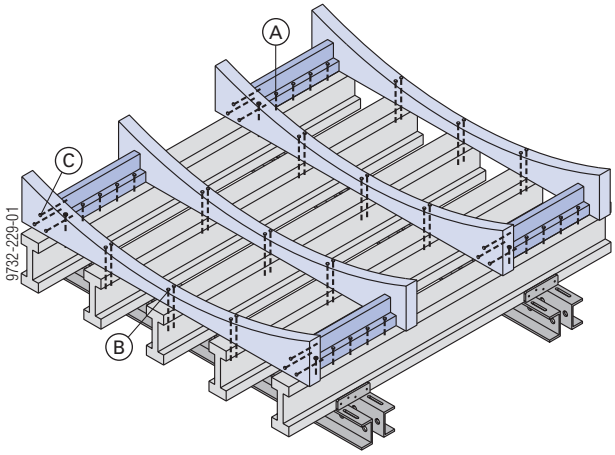


Mounting profiled timber formers

Up to a max. nailing thickness **(a)** of 5.0 cm, the profiled timber formers can be nailed directly onto the beam.
Where the profiled timber formers are thicker than this, they are nailed from the side through blocks screwed onto the beams. These 'beam-blocks' also prevent the profiled timber formers from tipping over on their sides.
The blocks are cut to size from used Doka beams.



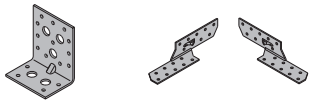
A	Doka beam
B	Nailed joint
C	Profiled timber former
D	Beam block



A	Beam block screwed onto Doka beam
B	Profiled timber former nailed onto Doka beam
C	Profiled timber former nailed onto beam-block

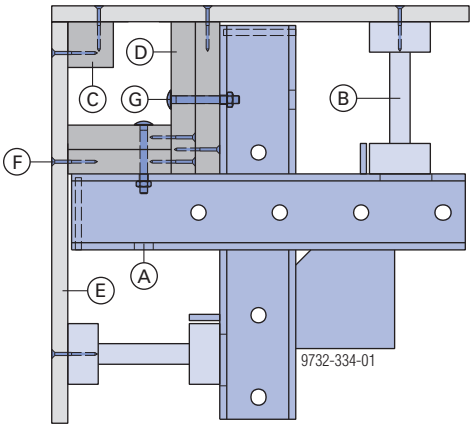
Angle connector 9x5cm and Rafter plates right / left

Can be used for various timber joints such as Doka beams that cross over one another, or joints between Doka beams and squared timbers or profiled timber formers.



Mounting the inside corner with the Corner waling 20

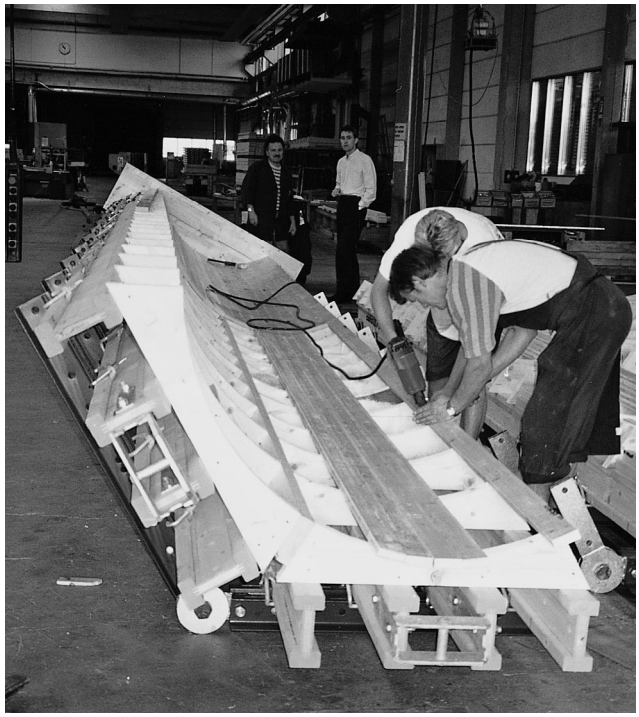
Doka beams, squared timbers and web boards are screwed together and onto the Corner waling 20 to make a dimensionally stable corner element.



A	Corner waling 20
B	Doka beam
C	Squared timber
D	2 timber-former sheets 3-S 31mm or 3 Doka formwork sheets 3-SO 21mm or 3 Dokaplex formwork sheets 21mm
E	Doka formwork sheet
F	Countersunk chipboard screw 6x60, partial thread (every 100 mm)
G	Square bolt M10x90

Doka Pre-assembly Service

Ready-to-use formworks - for even the most unusual assignments



Whatever it is you need to construct from concrete, the Doka Pre-assembly Service can put together the right formwork for you - quickly, and in guaranteed Doka quality.

No matter whether you are looking for a special concrete finish or a custom solution for a tunnel or bridge.

The professionals from the Doka Pre-assembly Service plan and make **ready-to-use standard and custom formworks** exactly to your specifications.

By delivering 'just-in-time', straight to your site, we **save space** on your site and **reduce the amount of planning and assembly work** that you have to do.

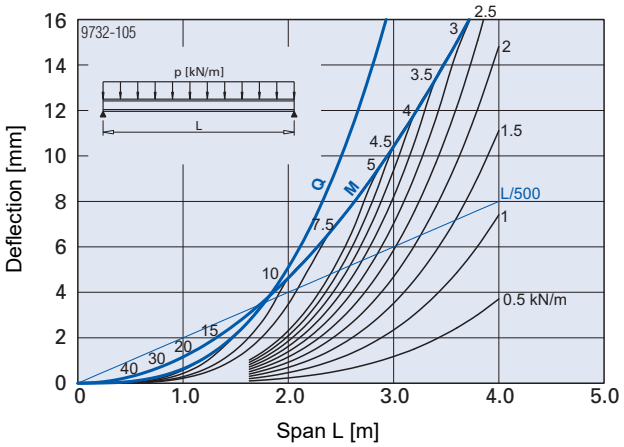
We'll be pleased to inform you about all that the Doka Pre-assembly Service can do for you. Your local/regional Doka branch would also be happy to draw up a tender for your next project.

Structural design

Deflection diagrams

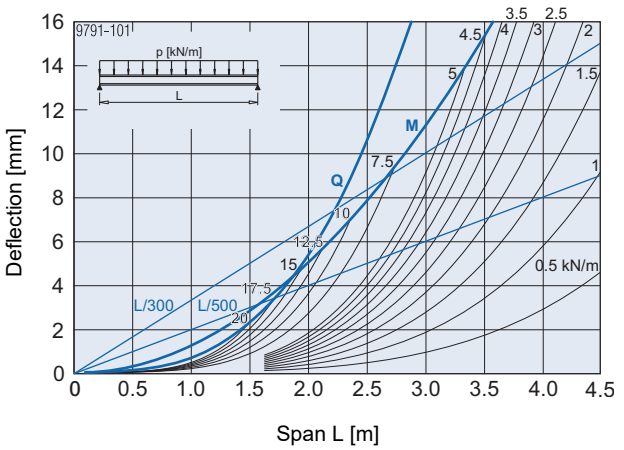
All values in the diagrams are based on a wood moisture content of 20%. If the moisture levels are higher than this, two effects will occur: The modulus of elasticity will greatly decrease (i.e. deformation will increase), and the strength values will be lower. This leads to a reduction in the load-bearing capacity.

Doka beam H20



M ... permitted bending moment
Q ... permitted shear force
p ... actual load (service load)

Doka beam XT20

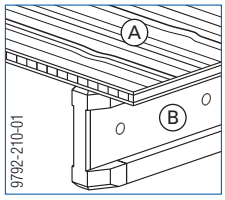


M ... permitted bending moment
Q ... permitted shear force
p ... actual load (service load)

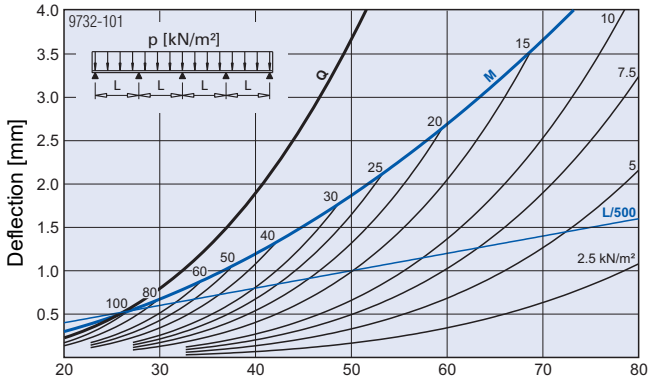
Doka formwork sheets 3-SO
Doka texture sheets 3-SO

NOTICE

The grain of the face layer **(A)** must run at right angles to the supports **(B)** .

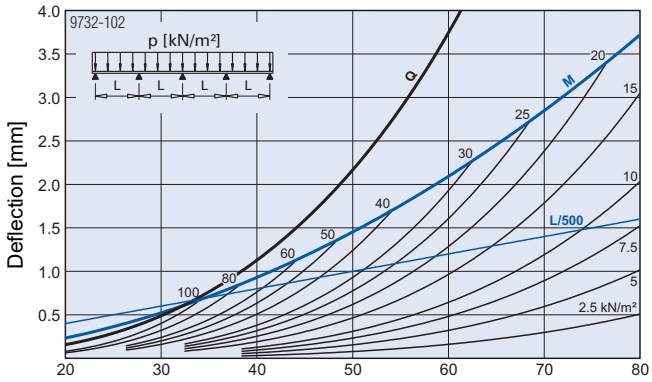


21 mm



M ... permitted bending moment
Q ... permitted shear force

27 mm

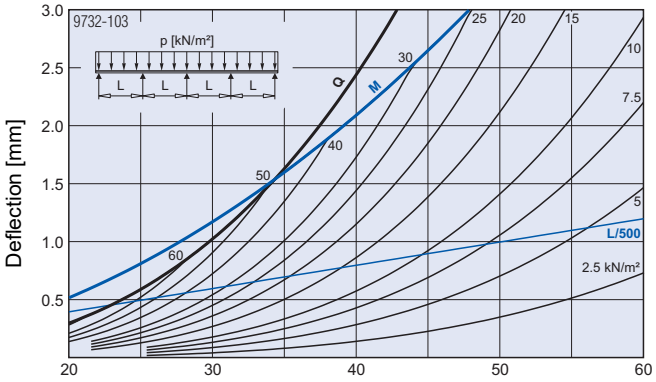


M ... permitted bending moment
Q ... permitted shear force

Dokaplex formwork sheets

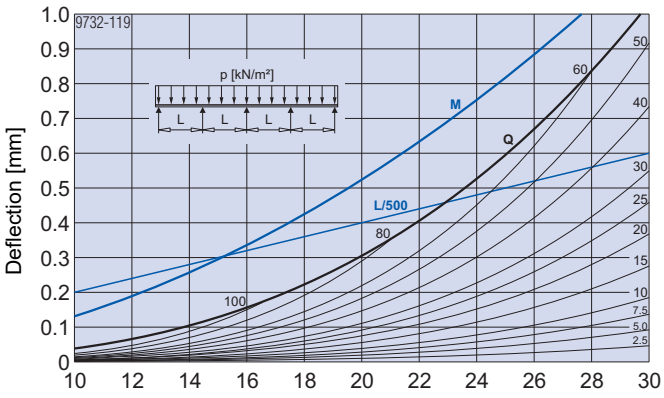
Note:
The grain of the face layer can be arranged in any direction relative to the supports.

18 mm



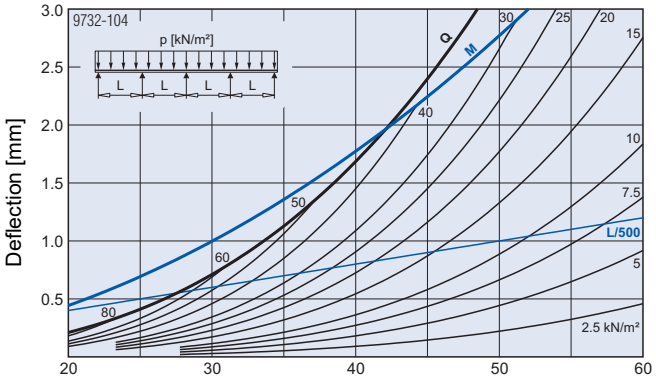
Flexural stiffness EI = 3.1 kNm²/m (15% timber moisture content)
M ... permitted bending moment
Q ... permitted shear force

18 mm - detailed view



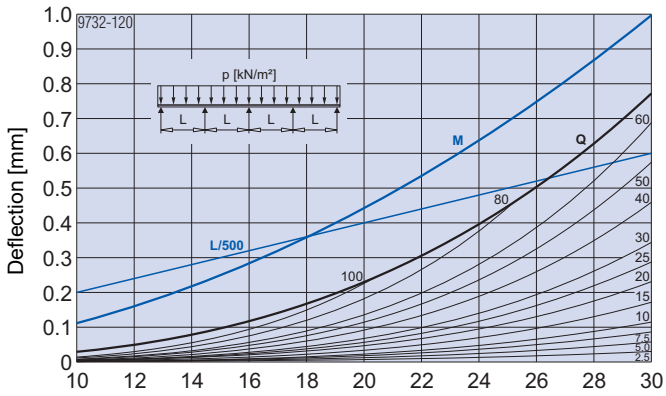
Flexural stiffness EI = 3.1 kNm²/m (15% timber moisture content)
M ... permitted bending moment
Q ... permitted shear force

21 mm



Flexural stiffness EI = 4.7 kNm²/m (15% timber moisture content)
M ... permitted bending moment
Q ... permitted shear force

21 mm - detailed view



Flexural stiffness EI = 4.7 kNm²/m (15% timber moisture content)
M ... permitted bending moment
Q ... permitted shear force

9 mm

The Dokaplex formwork sheet 9mm is only used for facing profiled timber formers, e.g. as a simple way of forming curved surfaces.

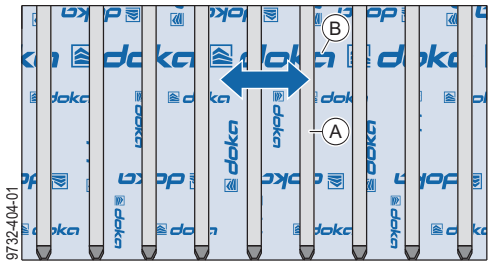
Xlife sheets 21mm

NOTICE

The deflection characteristics of the Xlife sheet in the longitudinal are different from those in the transverse direction. The only way to tell which is the longitudinal and which is the transverse direction is by the direction of the lettering on the formwork sheets.

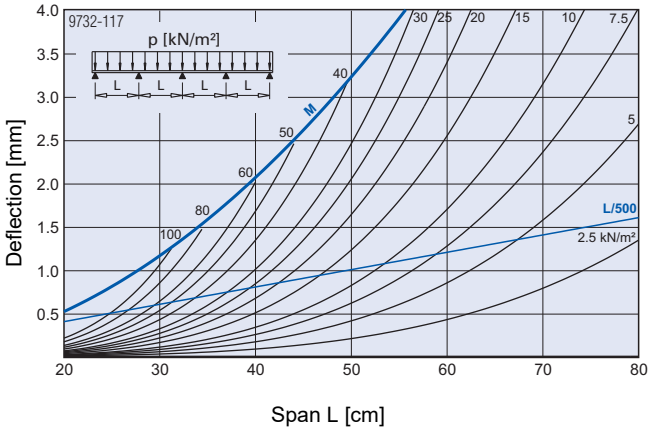
For the purpose of the following graphs, then, be sure to know which way round the Xlife sheets are placed in relation to the supports (e.g. Doka beams).

Large Doka logos of the sheet lettering at right angles to the beam axis (Xlife sheet longside horizontal)



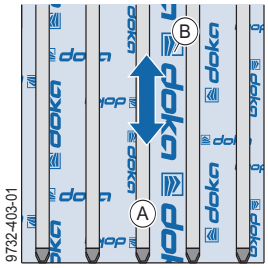
A Support

B Sheet lettering (large Doka logos)



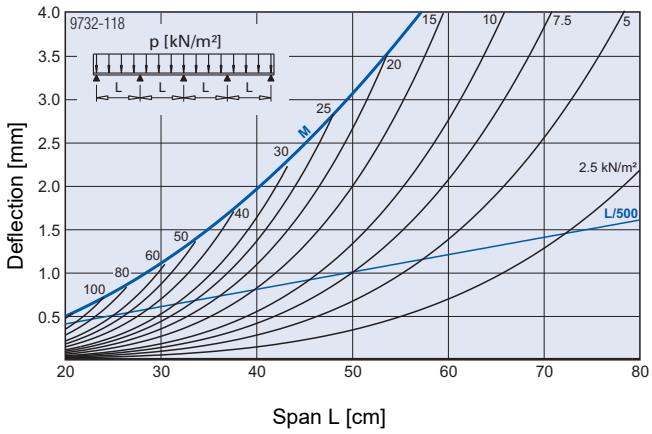
M ... permissible bending moment

Large Doka logos of the sheet lettering parallel to the beam axis (Xlife sheet longside vertical)



A Support

B Sheet lettering (large Doka logos)

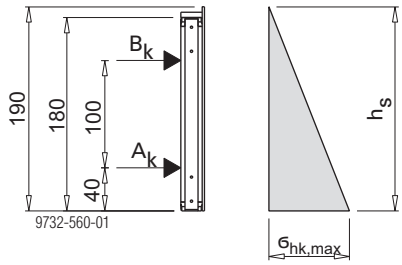


M ... permissible bending moment

Top 50 elements

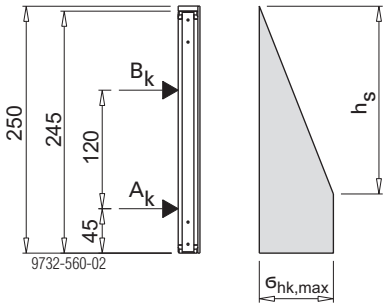
Doka beam H20

Formwork height 1.90 m



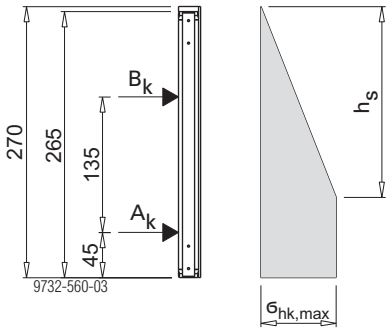
Perm. fresh-concrete pressure $\sigma_{hk,max}$ [kN/m²]	30	40	50	60	70	80
Beam centres [cm]	71	63	62	-	-	-
Max. span deflection [mm]	0.3	0.2	0.1	-	-	-
Max. cantilever deflection [mm]	0.4	0.4	0.3	-	-	-
Waling load B_k [kN/m]	12	11	11	-	-	-
Waling load A_k [kN/m]	27	33	35	-	-	-

Formwork height 2.50 m



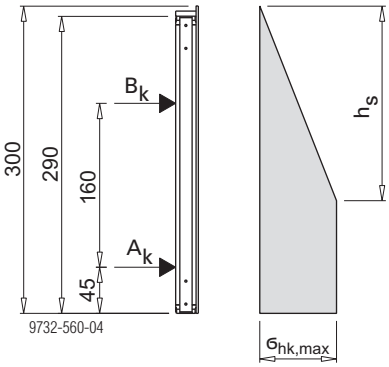
Perm. fresh-concrete pressure $\sigma_{hk,max}$ [kN/m²]	30	40	50	60	70	80
Beam centres [cm]	63	48	42	41	-	-
Max. span deflection [mm]	0.7	0.7	0.6	0.5	-	-
Max. cantilever deflection [mm]	0	0	0	0	-	-
Waling load B_k [kN/m]	30	31	31	31	-	-
Waling load A_k [kN/m]	34	45	54	59	-	-

Formwork height 2.70 m



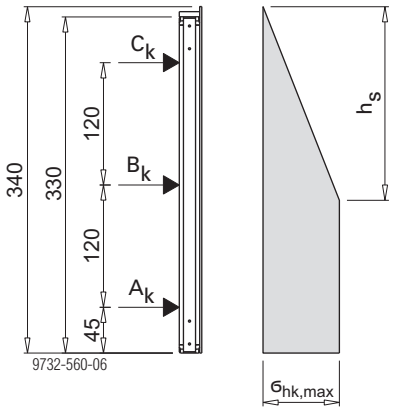
Perm. fresh-concrete pressure $\sigma_{hk,max}$ [kN/m²]	30	40	50	60	70	80
Beam centres [cm]	54	41	35	33	-	-
Max. span deflection [mm]	0.7	0.7	0.6	0.5	-	-
Max. cantilever deflection [mm]	0	0	0	0	-	-
Waling load B_k [kN/m]	30	31	31	31	-	-
Waling load A_k [kN/m]	34	45	54	59	-	-

Formwork height 3.00 m



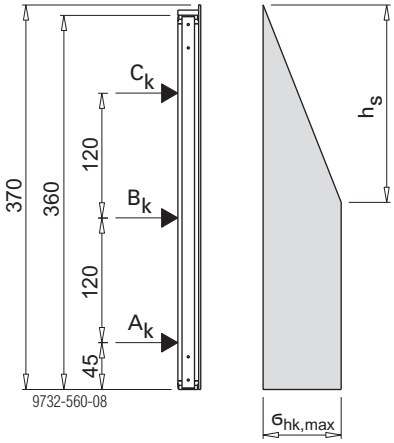
Perm. fresh-concrete pressure $\sigma_{hk,max}$ [kN/m²]	30	40	50	60	70	80
Beam centres [cm]	47	35	29	26	26	-
Max. span deflection [mm]	1.5	1.6	1.5	1.3	1.2	-
Max. cantilever deflection [mm]	0	0	0	0	0	-
Waling load B_k [kN/m]	35	38	40	39	39	-
Waling load A_k [kN/m]	37	50	60	69	73	-

Formwork height 3.40 m



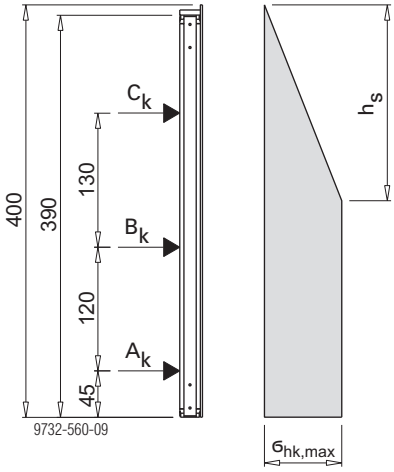
Perm. fresh-concrete pressure $\sigma_{hk,max}$ [kN/m²]	30	40	50	60	70	80
Beam centres [cm]	54	44	36	31	28	27
Max. span deflection [mm]	0.3	0.3	0.3	0.3	0.3	0.2
Max. cantilever deflection [mm]	0.1	0.1	0.1	0.1	0.1	0.3
Waling load C_k [kN/m]	15	14.4	14	13.6	13.7	13.9
Waling load B_k [kN/m]	39	49	55	56	56	55
Waling load A_k [kN/m]	31	41	52	62	71	75

Formwork height 3.70 m



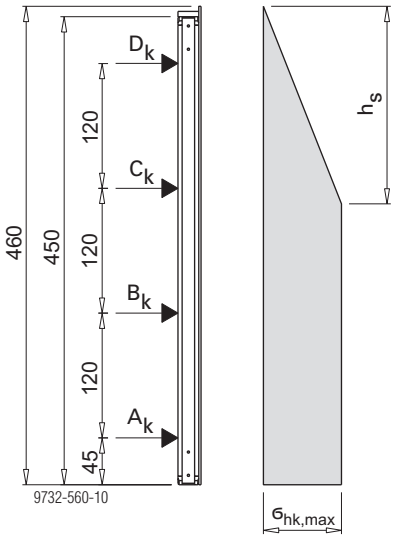
Perm. fresh-concrete pressure $\sigma_{hk,max}$ [kN/m²]	30	40	50	60	70	80
Beam centres [cm]	57	44	35	31	26	25
Max. span deflection [mm]	0.3	0.3	0.3	0.3	0.3	0.3
Max. cantilever deflection [mm]	0.2	0.1	0.1	0.2	0.2	0.2
Waling load C_k [kN/m]	25	26	25	25	25	25
Waling load B_k [kN/m]	38	50	59	56	65	64
Waling load A_k [kN/m]	31	41	52	56	73	80

Formwork height 4.00 m



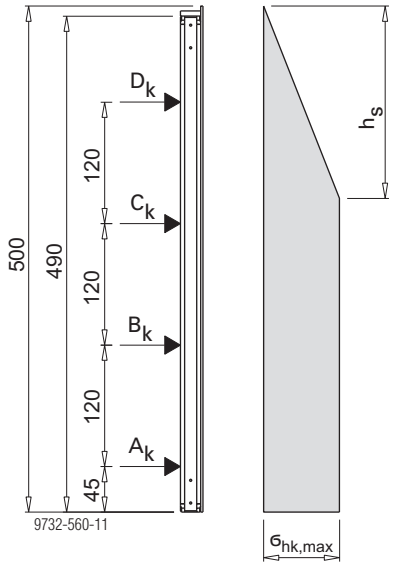
Perm. fresh-concrete pressure $\sigma_{hk,max}$ [kN/m²]	30	40	50	60	70	80
Beam centres [cm]	52	39	33	28	26	23
Max. span deflection [mm]	0.4	0.4	0.4	0.3	0.4	0.4
Max. cantilever deflection [mm]	0.3	0.1	0.1	0.1	0.1	0.2
Waling load C_k [kN/m]	30	32	32	31	31	34
Waling load B_k [kN/m]	41	55	66	74	77	74
Waling load A_k [kN/m]	31	41	52	63	74	84

Formwork height 4.60 m



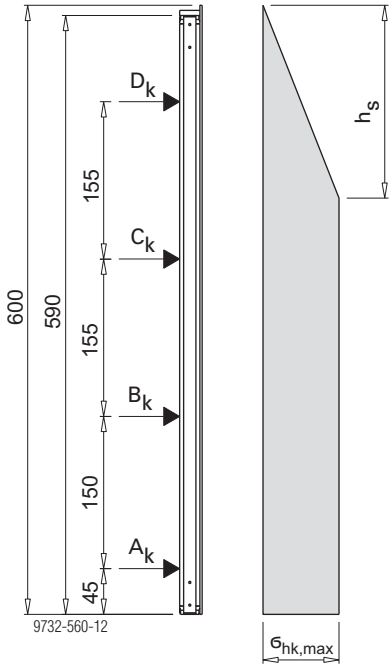
Perm. fresh-concrete pressure $\sigma_{hk,max}$ [kN/m²]	30	40	50	60	70	80
Beam centres [cm]	55	44	35	29	25	22
Max. span deflection [mm]	0.4	0.3	0.2	0.3	0.3	0.3
Max. cantilever deflection [mm]	0.1	0.1	0.1	0.1	0.1	0.1
Waling load D_k [kN/m]	15	15	14	14	14	14
Waling load C_k [kN/m]	39	47	53	54	54	53
Waling load B_k [kN/m]	37	49	62	74	84	90
Waling load A_k [kN/m]	31	41	51	62	72	83

Formwork height 5.00 m



Perm. fresh-concrete pressure $\sigma_{hk,max}$ [kN/m²]	30	40	50	60	70	80
Beam centres [cm]	60	44	35	29	25	22
Max. span deflection [mm]	0.3	0.3	0.2	0.3	0.3	0.3
Max. cantilever deflection [mm]	0.8	0.5	0.4	0.4	0.4	0.4
Waling load D_k [kN/m]	29	30	30	29	29	29
Waling load C_k [kN/m]	36	48	57	62	64	64
Waling load B_k [kN/m]	37	49	62	77	87	96
Waling load A_k [kN/m]	31	41	52	62	72	83

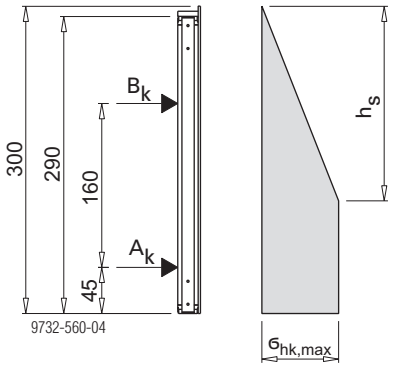
Formwork height 6.00 m



Perm. fresh-concrete pressure $\sigma_{hk,max}$ [kN/m²]	30	40	50	60	70	80
Beam centres [cm]	44	33	27	22	19	15
Max. span deflection [mm]	0.7	0.7	0.6	0.6	0.6	0.6
Max. cantilever deflection [mm]	0	0	0	0	0	0
Waling load D_k [kN/m]	32	34	35	35	34	38
Waling load C_k [kN/m]	48	65	79	89	95	95
Waling load B_k [kN/m]	48	64	80	97	114	129
Waling load A_k [kN/m]	34	45	56	67	78	90

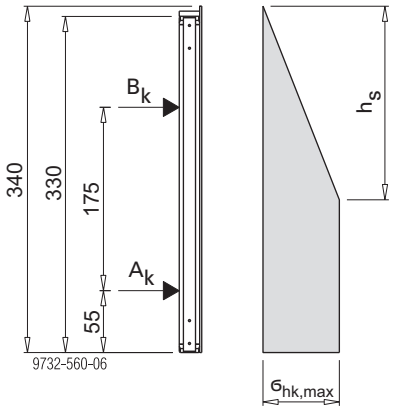
Doka beam XT20

Formwork height 3.00 m



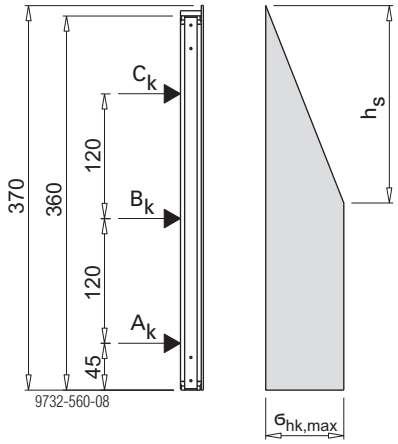
Permitted fresh-concrete pressure $\sigma_{hk,max}$ [kN/m²]	30	40	50	60	70	75
Beam centres [cm]	71	53	44	39	39	38
Max. span deflection [mm]	1.8	1.8	1.7	1.5	1.4	1.3
Max. cantilever deflection [mm]	0	0	0	0	0	0
Waling load B_k [kN/m]	35	38	40	39	39	39
Waling load A_k [kN/m]	37	50	60	69	73	74

Formwork height 3.40 m



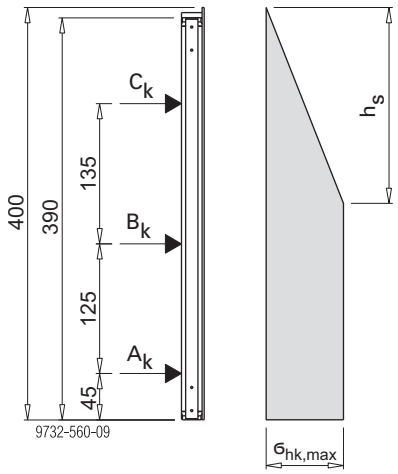
Permitted fresh-concrete pressure $\sigma_{hk,max}$ [kN/m²]	30	40	50	60	70	80
Beam centres [cm]	62	47	38	33	32	31
Max. span deflection [mm]	1.9	2.1	2.0	1.9	1.6	1.4
Max. cantilever deflection [mm]	1.0	2.2	2.4	2.2	1.9	1.6
Waling load B_k [kN/m]	42	47	49	50	49	49
Waling load A_k [kN/m]	42	57	71	82	91	96

Formwork height 3.70 m



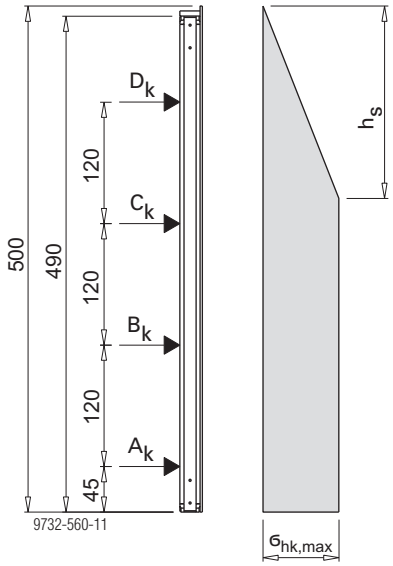
Permitted fresh-concrete pressure $\sigma_{hk,max}$ [kN/m²]	30	40	50	60	70	80	90
Beam centres [cm]	84	66	54	47	41	39	38
Max. span deflection [mm]	0.4	0.3	0.3	0.4	0.3	0.3	0.2
Max. cantilever deflection [mm]	0	0	0	0	0	0	0
Waling load C_k [kN/m]	21	21	21	20	20	21	21
Waling load B_k [kN/m]	39	50	58	61	62	61	60
Waling load A_k [kN/m]	31	41	52	62	72	79	81

Formwork height 4.00 m



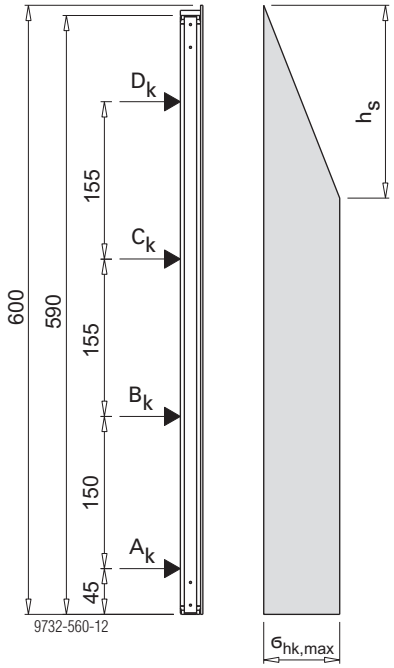
Permitted fresh-concrete pressure $\sigma_{hk,max}$ [kN/m²]	30	40	50	60	70	80	90	100
Beam centres [cm]	71	53	45	38	35	31	30	30
Max. span deflection [mm]	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0.3
Max. cantilever deflection [mm]	0.3	0	0	0.1	0.1	0.1	0.1	0.1
Waling load C_k [kN/m]	30	32	32	31	31	31	31	31
Waling load B_k [kN/m]	41	55	66	74	77	79	77	76
Waling load A_k [kN/m]	31	41	52	63	74	84	90	92

Formwork height 5.00 m



Permitted fresh-concrete pressure $\sigma_{hk,max}$ [kN/m²]	30	40	50	60	70	80	90	100	110
Beam centres [cm]	90	66	53	44	38	33	30	29	27
Max. span deflection [mm]	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3
Max. cantilever deflection [mm]	1.0	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3
Waling load D_k [kN/m]	29	30	30	29	29	29	29	30	29
Waling load C_k [kN/m]	36	48	57	62	64	64	63	63	63
Waling load B_k [kN/m]	37	49	62	75	87	97	103	105	104
Waling load A_k [kN/m]	31	41	51	62	72	83	94	104	112

Formwork height 6.00 m



Permitted fresh-concrete pressure $\sigma_{hk,max}$ [kN/m²]	30	40	50	60	70	80	90	100	110
Beam centres [cm]	60	45	37	30	26	23	20	18	16
Max. span deflection [mm]	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3
Max. cantilever deflection [mm]	0	0	0	0	0	0	0	0	0
Waling load D_k [kN/m]	32	35	35	35	34	34	34	34	34
Waling load C_k [kN/m]	48	65	79	89	95	100	99	98	97
Waling load B_k [kN/m]	48	64	80	97	114	132	145	156	163
Waling load A_k [kN/m]	34	45	56	67	78	91	101	113	125

Doka walings

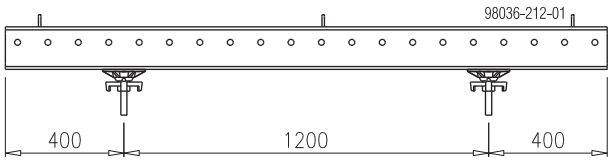
NOTICE

This table refers only to one single element with 2 cantilever arms.

It takes no account of:

- continuity effects with other elements
- combinations of elements
- closures
- stop-ends etc.

Practical example:
400-1200-400 tie-spacing with WS10 2.00m

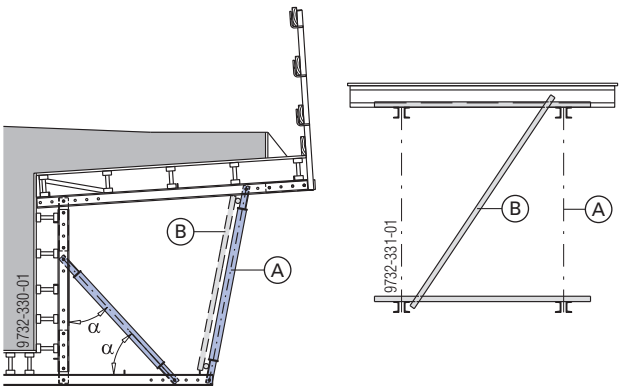


			WS10 Top50		WU12 Top50		WU16 SL-1	
Waling length	Number of form-ties	Spacing of form-ties on standard elements	Max. perm. waling load	Characteristic anchor force	Max. perm. waling load	Characteristic anchor force	Max. perm. waling load	Characteristic anchor force
[m]		[mm]	$q_{R,k}$ [kN/m]	$N_{R,k}$ [kN]	$q_{R,k}$ [kN/m]	$N_{R,k}$ [kN]	$q_{R,k}$ [kN/m]	$N_{R,k}$ [kN]
0.50	1	250 - 250	307	154	-	-	-	-
0.625	1	312 - 312	-	-	-	-	480	300
0.75	2	200 - 350 - 200	376	141	-	-	800	300
	1	375 - 375	163	122	-	-	370	278
1.00	2	250 - 500 - 250	271	136	395	198	610	305
	1	500 - 500	97	97	144	144	235	235
1.25	2	250 - 750 - 250	214	134	306	191	427	267
	1	625 - 625	63	79	94	118	160	200
1.50	2	300 - 900 - 300	182	137	260	195	359	269
	1	750 - 750	43	65	65	98	113	170
1.75	2	300 - 1150 - 300	102	89	152	133	265	232
2.00	2	400 - 1200 - 400	123	123	177	177	265	265
	2	450 - 1100 - 450	112	112	163	163	254	254
	2	500 - 1000 - 500	97	97	144	144	236	236
	2	525 - 950 - 525	89	89	131	131	217	217
	3	275 - 725 - 725 - 275	205	154	292	219	-	-
2.25	2	450 - 1350 - 450	97	109	-	-	226	254
	2	500 - 1250 - 500	93	105	-	-	215	242
	2	550 - 1150 - 550	81	91	-	-	198	223
	3	330 - 795 - 795 - 330	184	145	-	-	-	-
2.50	2	450 - 1600 - 450	56	70	83	104	146	183
	2	500 - 1500 - 500	79	99	117	146	195	244
	2	550 - 1400 - 550	79	99	115	144	184	230
	2	625 - 1250 - 625	63	79	94	118	160	200
	3	360 - 890 - 890 - 360	157	140	226	202	-	-
2.75	3	450 - 925 - 925 - 450	115	111	-	-	-	-
	3	500 - 875 - 875 - 500	96	100	-	-	-	-
	3	550 - 825 - 825 - 550	81	92	-	-	-	-
3.00	3	450 - 1050 - 1050 - 450	113	116	165	169	257	263
	3	500 - 1000 - 1000 - 500	96	102	140	149	225	239
	3	550 - 950 - 950 - 550	81	93	119	136	196	224
	2	625 - 1750 - 625	61	92	90	135	144	216
3.50	3	450 - 1300 - 1300 - 450	62	86	94	131	-	-
	3	500 - 1250 - 1250 - 500	74	93	112	141	-	-
	3	550 - 1200 - 1200 - 550	80	95	118	140	-	-
4.00	4	450 - 1030 - 1040 - 1030 - 450	109	111	162	165	-	-
	4	500 - 1000 - 1000 - 1000 - 500	96	101	141	148	-	-
	4	550 - 1000 - 900 - 1000 - 550	81	92	119	136	-	-

			WS10 Top50		WU12 Top50		WU16 SL-1	
Waling length	Number of form-ties	Spacing of form-ties on standard elements	Max. perm. waling load	Characteristic anchor force	Max. perm. waling load	Characteristic anchor force	Max. perm. waling load	Characteristic anchor force
[m]		[mm]	$q_{R,k}$ [kN/m]	$N_{R,k}$ [kN]	$q_{R,k}$ [kN/m]	$N_{R,k}$ [kN]	$q_{R,k}$ [kN/m]	$N_{R,k}$ [kN]
4.50	4	450 - 1200 - 1200 - 1200 - 450	94	115	-	-	-	-
	4	500 - 1150 - 1200 - 1150 - 500	95	111	-	-	-	-
	4	550 - 1120 - 1160 - 1120 - 550	80	92	-	-	-	-
5.00	4	450 - 1400 - 1300 - 1400 - 450	73	102	-	-	-	-
	4	500 - 1340 - 1320 - 1340 - 500	78	105	-	-	-	-
	4	550 - 1325 - 1250 - 1325 - 550	79	101	-	-	-	-
5.50	5	450 - 1150 - 1150 - 1150 - 1150 - 450	90	105	-	-	-	-
	5	500 - 1150 - 1100 - 1100 - 1150 - 500	94	104	-	-	-	-
	5	550 - 1050 - 1150 - 1150 - 1050 - 550	80	98	-	-	-	-
6.00	5	450 - 1250 - 1300 - 1300 - 1250 - 450	71	93	-	-	-	-
	5	500 - 1250 - 1250 - 1250 - 1250 - 500	76	96	-	-	-	-
	5	550 - 1250 - 1200 - 1200 - 1250 - 550	80	96	-	-	-	-

Struts

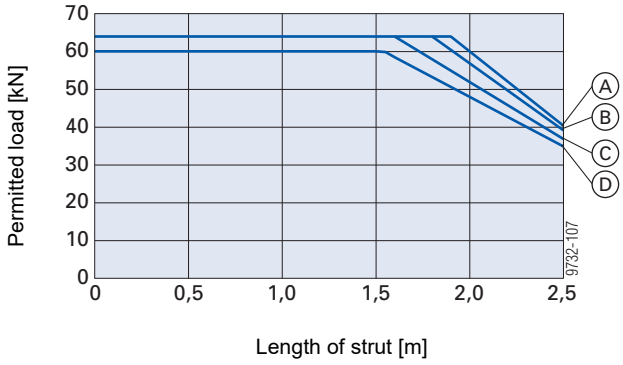
Fixed struts



Min. angle α between strut and waling = 30°

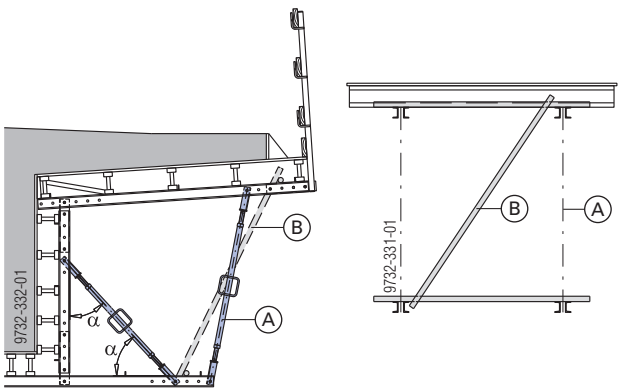
A Strut
B Bracing

Universal strut T5/5 .....mm



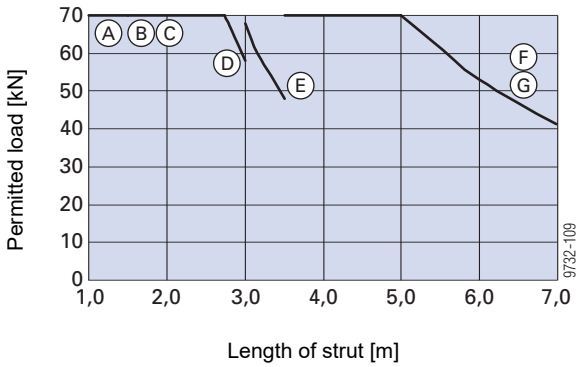
A With no bracing on the strut
Ensure that the parallel frame sections are adequately braced!
B With bracing on the strut
C With bracing on the strut + 2% longitudinal bridge slope
D With bracing on the strut + 4% longitudinal bridge slope

Spindle struts

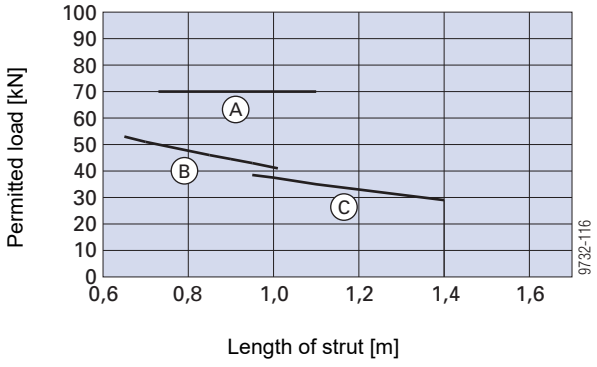


Min. angle α between strut and waling = 30°

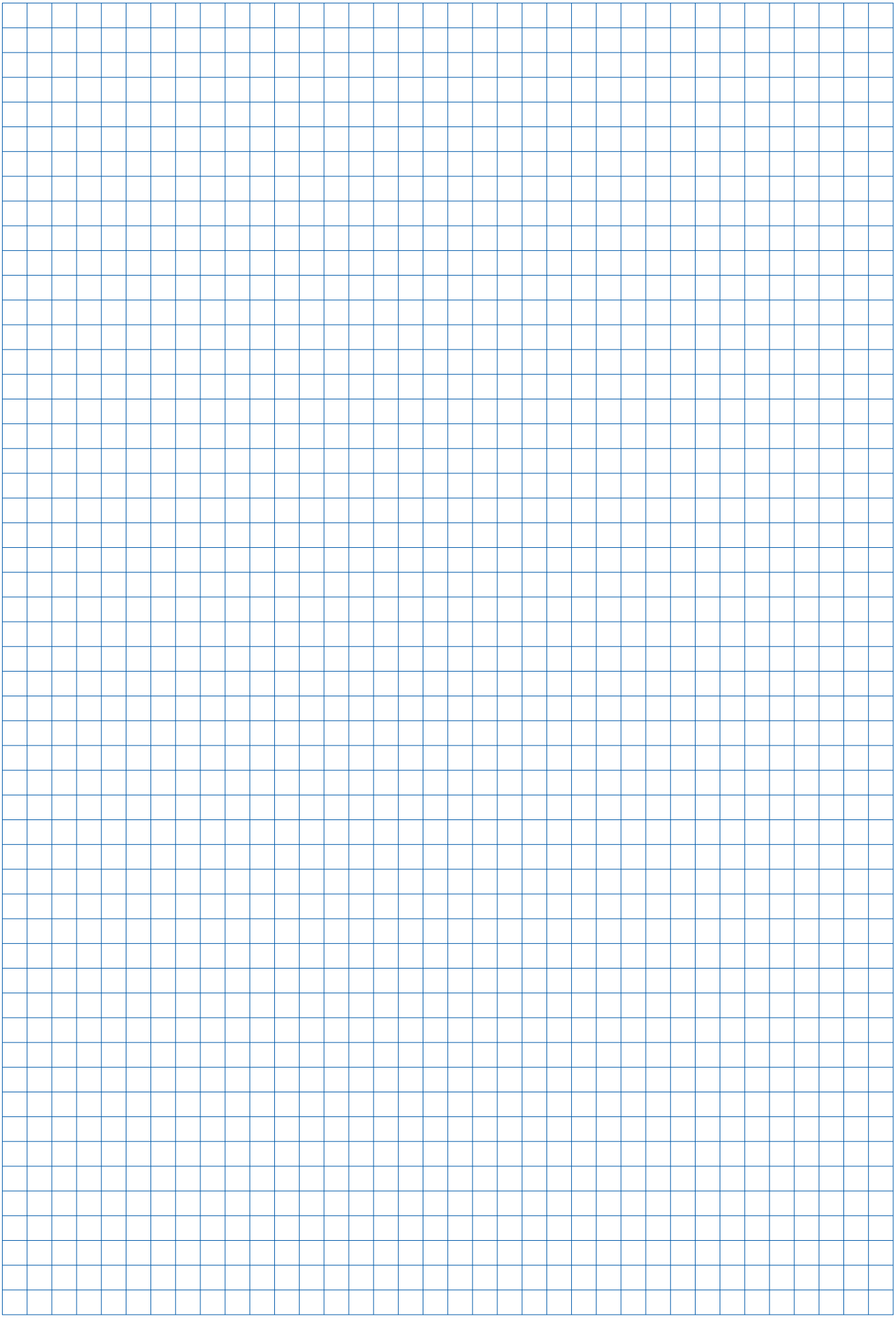
A Spindle strut
B Bracing



A Spindle strut T6 100/150cm
B Spindle strut T7 150/200cm
C Spindle strut T7 200/250cm
D Spindle strut T7 250/300cm
E Spindle strut T7 305/355cm
F Spindle strut T10 350/400cm
G Spindle strut T10 ....mm (specify min. length of strut)



A Spindle strut T6 73/110cm
B Spindle strut GS T5 65/101cm
C Spindle strut GS T6 95/140cm
D Spindle strut GS T7 109/166cm



General

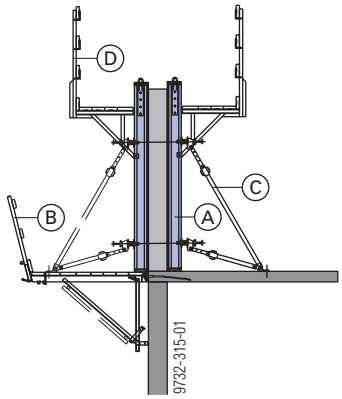
Top 50 combined with . . .

Doka folding platforms

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

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

This makes work at great heights faster and more efficient.

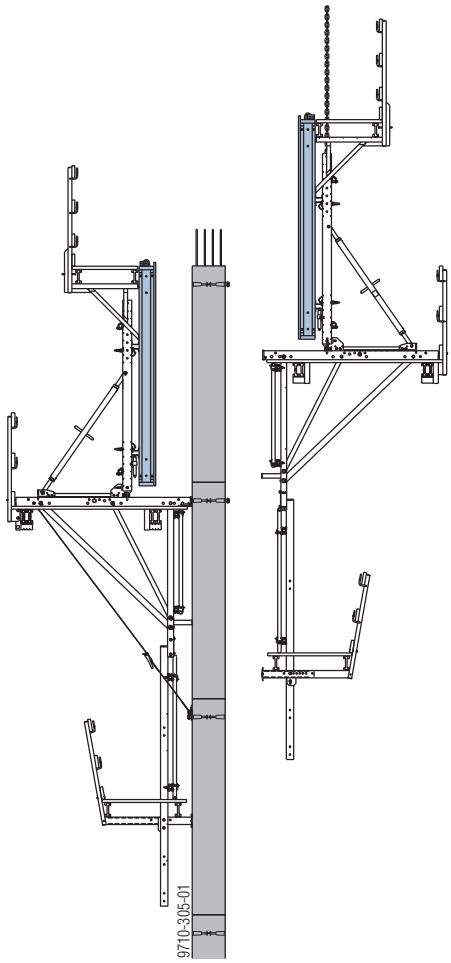


A	Top 50 element
B	Folding platform K, A or B
C	Panel strut
D	Universal bracket

Follow the directions in the 'Folding platform K' or 'Climbing formwork K' User Information booklet!

Doka climbing formwork MF240

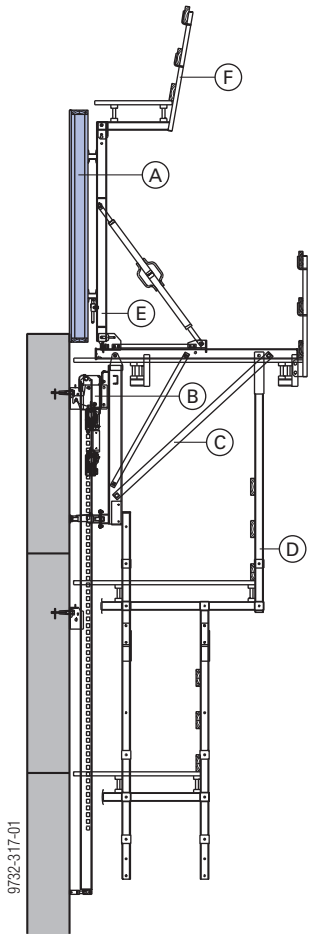
Climbing formwork MF240 proves its versatility on all tall structures. The formwork and climbing scaffold are linked together as a single unit which can be repositioned in one single crane cycle.



Follow the directions in the 'Climbing formwork MF240' 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.

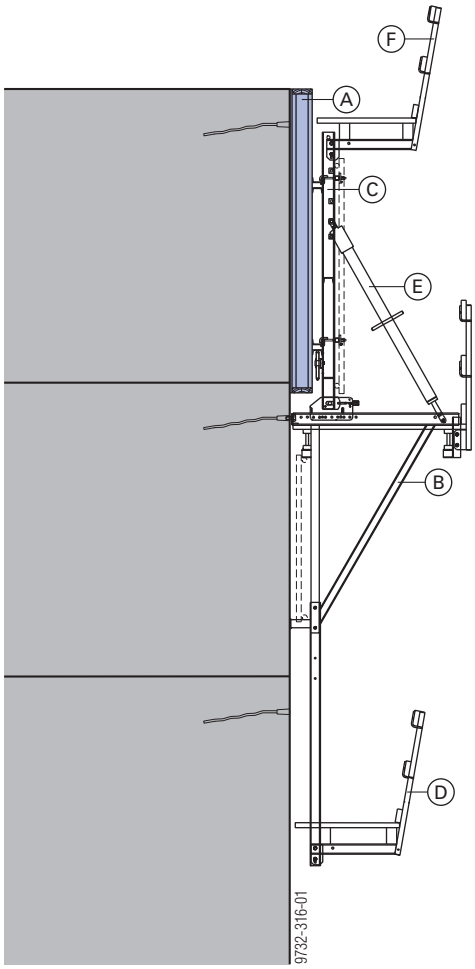


A	Top 50 element
B	Automatic climber SKE50
C	Climbing bracket MF240
D	Suspended platform SKE/MF 425
E	Travelling unit MF
F	Screw-on access bracket MF75

Doka dam formwork

Doka dam formwork is used for building mass concrete structures that have to be constructed in several casting sections, such as dams, barrages and navigation locks etc.

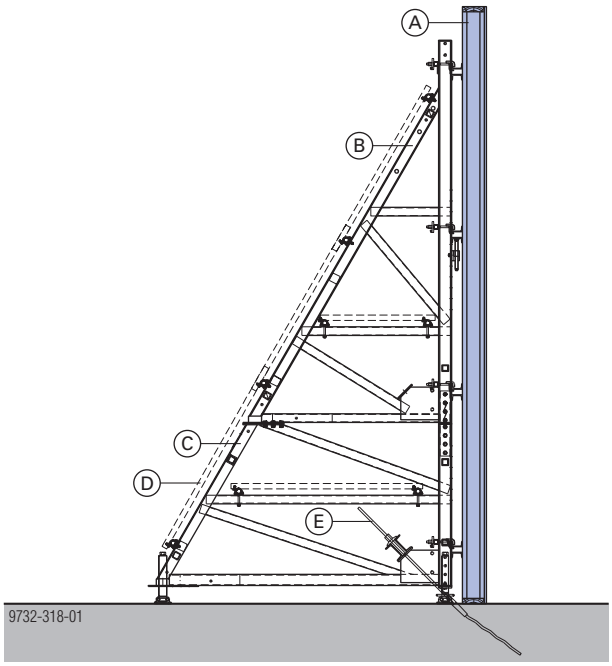
The pressure of the fresh concrete is transferred into the previous casting section by the climbing scaffold, meaning that no form-ties are needed.



A	Top 50 element
B	Cantilever bracket
C	Vertical waling
D	Suspended platform
E	Spindle strut
F	Screw-on access bracket MF75

Doka supporting construction frames

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



A	Top 50 element
B	Supporting construct. frame Universal F 4.50m
C	Attachable frame F 1.50m
D	Bracing
E	Tension anchoring

Follow the directions in the 'Supporting construction frame "Variable"' or 'Supporting construction frame “Universal”' User Information booklet!

Xsafe platform system plus

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

Easy to use

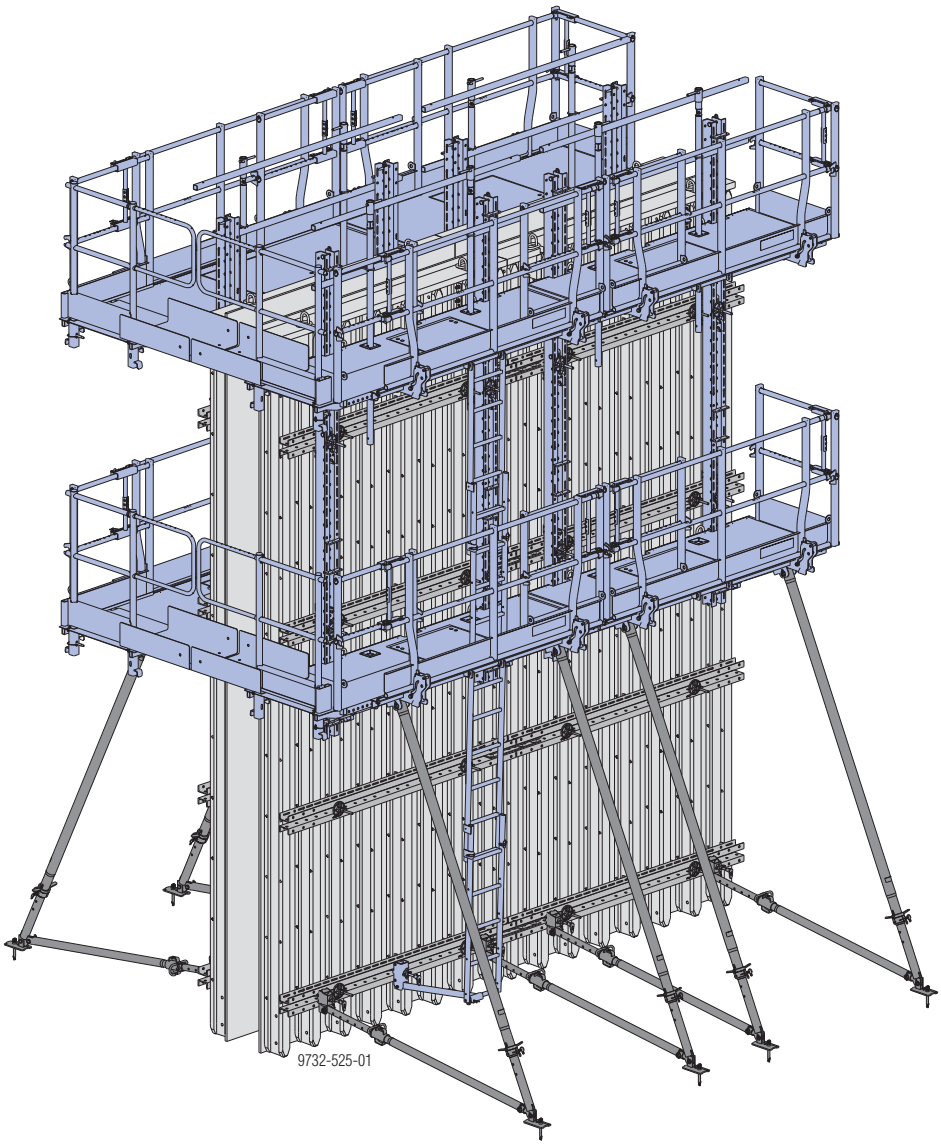
- pre-assembled, fold-out working platforms
- time and cost-savings as so little assembly work is needed
- system accessories for closure gaps and corner transitions

Safe working

- high safety, as side and end guards are integrated in the platform
- integrable ladder system

An economical solution

- its perfect stackability cuts storage and freight costs
- simplified planning, from using a single platform con-

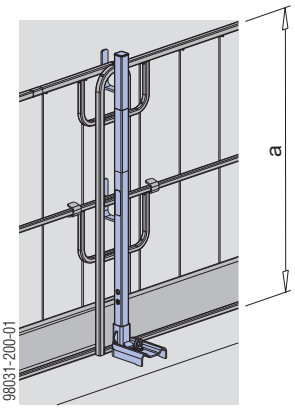


Follow the directions in the 'Xsafe platform system plus' User Information booklet.

Fall protection on the structure

Xsafe edge protection XP

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

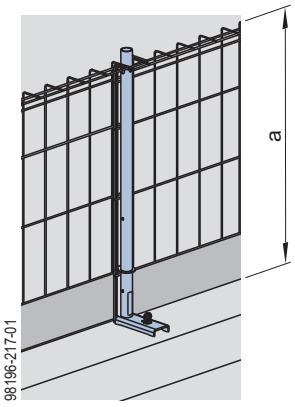


a ... > 1.00 m

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

Xsafe edge protection Z

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

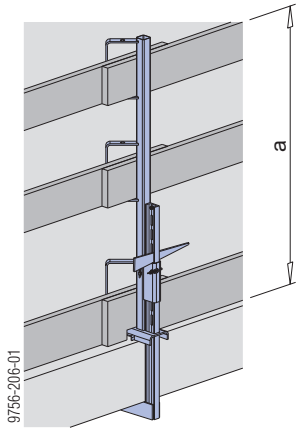


a ... > 1.17 m

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

Handrail clamp S

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

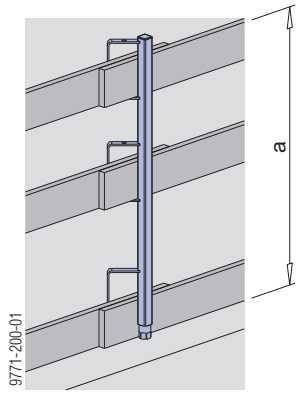


a ... > 1.00 m

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

Handrail post 1.10m

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



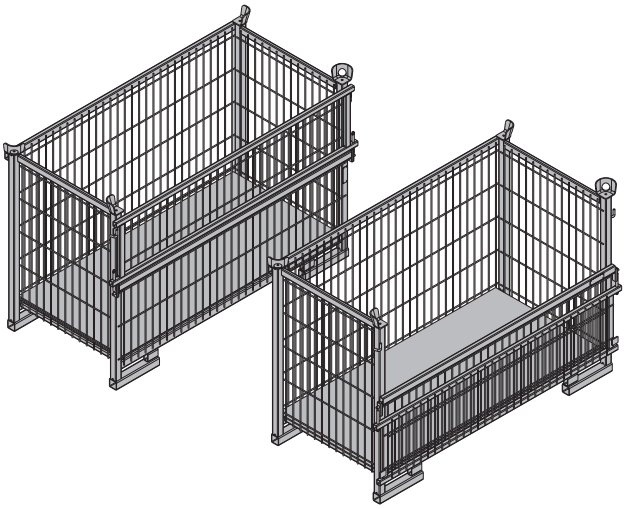
a ... > 1.00 m

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

Doka multi-trip packaging

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

Doka skeleton transport box 1.70x0.80m



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

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

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

Max. n° of units on top of one another

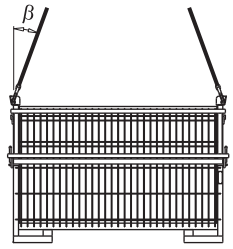
Outdoors (on the site) Floor gradients up to 3%	Indoors Floor gradients up to 1%
2	5
It is not allowed to stack empty pallets on top of one another!	

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

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

Lifting by crane

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



9234-203-01

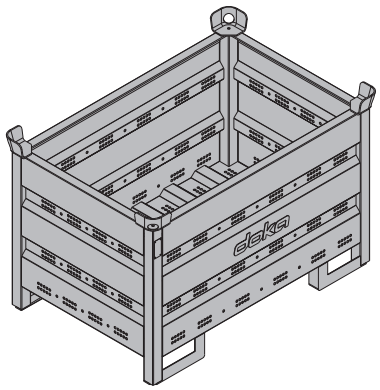
Repositioning by forklift truck or pallet stacking truck

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

Doka multi-trip transport box

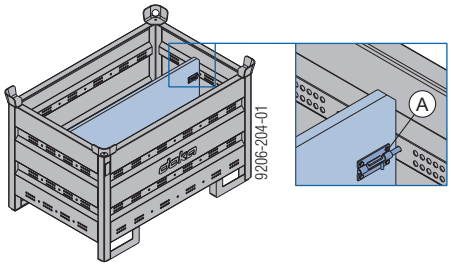
Storage and transport device for small items

Doka multi-trip transport box 1.20x0.80m



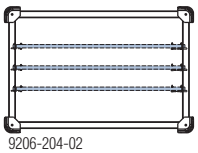
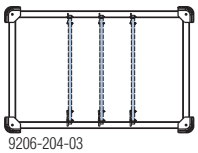
Permitted load-bearing capacity: 1500 kg (3300 lbs)
Permitted imposed stacking load: 7850 kg (17300 lbs)

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

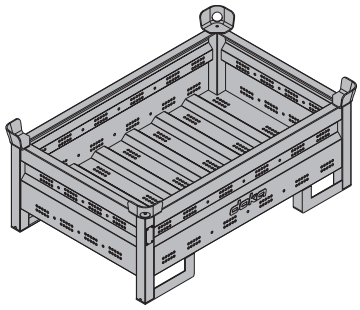


A Slide-bolt for fixing the partition

Possible ways of dividing the box

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

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



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

Using Doka multi-trip transport boxes as storage units

Max. n° of units on top of one another

Outdoors (on the site) Floor gradients up to 3%		Indoors Floor gradients up to 1%	
Doka multi-trip transport box		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

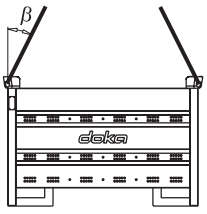
Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

Using Doka multi-trip transport boxes as transport devices

Lifting by crane

NOTICE

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



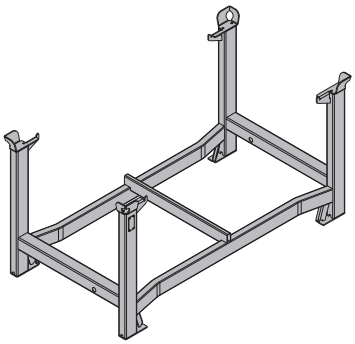
9206-202-01

Repositioning by forklift truck or pallet stacking truck

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

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

Storage and transport device for long items.



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

Using Doka stacking pallets as storage units

Max. number of units on top of one another

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

NOTICE

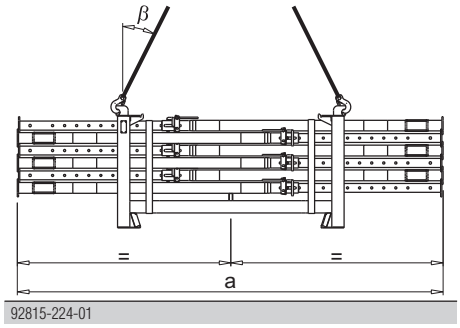
- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top!
- Castor wheels and Bolt-on castor set B must not be fitted to the bottom multi-trip packaging item in the stack.
- Secure multi-trip packagings with installed castor wheels using the fixing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

Using Doka stacking pallets as transport devices

Lifting by crane

NOTICE

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



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

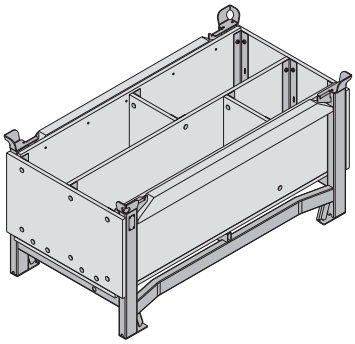
Repositioning by forklift truck or pallet stacking truck

NOTICE

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

Doka accessory box

Storage and transport device for small items.



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

Doka accessory boxes as storage units

Max. number of units on top of one another

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

NOTICE

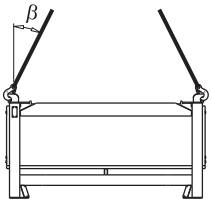
- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top!
- Castor wheels and Bolt-on castor set B must not be fitted to the bottom multi-trip packaging item in the stack.
- Secure multi-trip packagings with installed castor wheels using the fixing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

Doka accessory box as transport devices

Lifting by crane

NOTICE

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



92816-206-01

Repositioning by forklift truck or pallet stacking truck

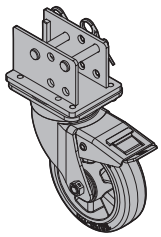
The forks can be inserted under either the broadside or the narrowside of the containers.

Universal castor wheel for transport pallet

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

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

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

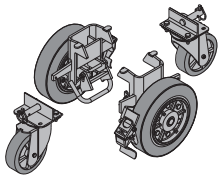


Bolt-on castor set B

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

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

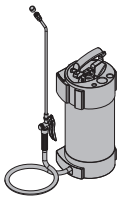
Follow the directions in the 'Bolt-on castor set B' User Information booklet!



Cleaning and care of your equipment

Release agents

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



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

NOTICE

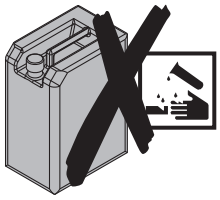
- Before every pour:
  - Apply release agent to the formwork sheet and the end faces **extremely thinly**, **evenly** and **in a continuous layer**.
- Make sure there are no drips of release-agent running down the formwork sheet.
- Applying too much release agent will spoil the concrete finish.

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

Cleaning

NOTICE

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

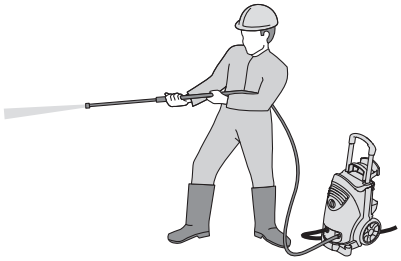


Cleaning high formwork:
Provide a service tower at a suitable cleaning location.

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

Cleaning equipment

High-pressure spray cleaner

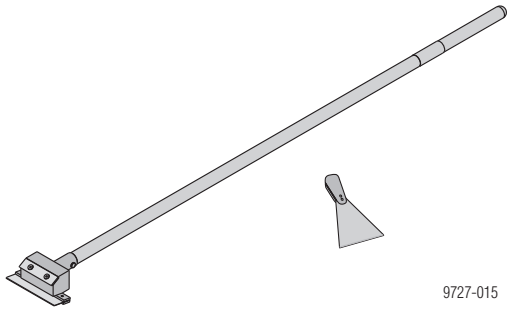


NOTICE

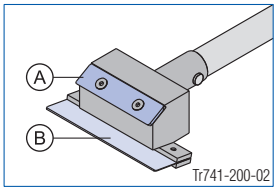
- Appliance pressure rating: 200 to max. 300 bar
- Keep the water-jet the correct distance from the formwork, and move it at the right speed:
  - The higher the pressure, the further away from the formwork you must keep the jet and the faster you must move it across the surface.
- Do not aim the jet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

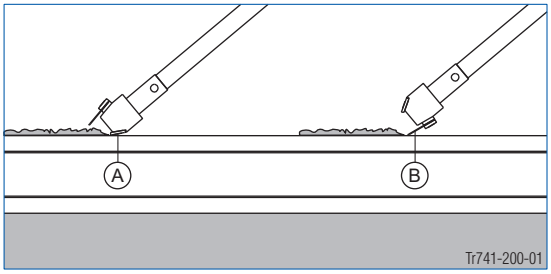
Concrete scraper

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



Functional description:

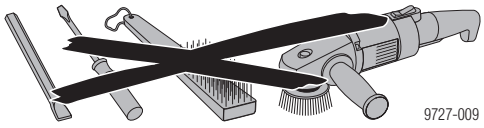




A Blade for dealing with heavy soiling
B Blade for dealing with slight soiling

NOTICE

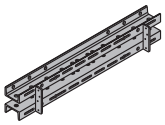
Do not use pointed or sharp objects, wire brushes, abrasive disks or cup brushes.



	[kg]	Article N°
Multi-purpose waling WS10 Top50 0.50m	**10.2**	**580001000**
Multi-purpose waling WS10 Top50 0.75m	**14.9**	**580002000**
Multi-purpose waling WS10 Top50 1.00m	**19.6**	**580003000**
Multi-purpose waling WS10 Top50 1.25m	**24.7**	**580004000**
Multi-purpose waling WS10 Top50 1.50m	**29.7**	**580005000**
Multi-purpose waling WS10 Top50 1.75m	**35.0**	**580006000**
Multi-purpose waling WS10 Top50 2.00m	**38.9**	**580007000**
Multi-purpose waling WS10 Top50 2.25m	**44.2**	**580008000**
Multi-purpose waling WS10 Top50 2.50m	**48.7**	**580009000**
Multi-purpose waling WS10 Top50 2.75m	**54.2**	**580010000**
Multi-purpose waling WS10 Top50 3.00m	**60.2**	**580011000**
Multi-purpose waling WS10 Top50 3.50m	**68.4**	**580012000**
Multi-purpose waling WS10 Top50 4.00m	**79.4**	**580013000**
Multi-purpose waling WS10 Top50 4.50m	**89.1**	**580014000**
Multi-purpose waling WS10 Top50 5.00m	**102.0**	**580015000**
Multi-purpose waling WS10 Top50 5.50m	**112.4**	**580016000**
Multi-purpose waling WS10 Top50 6.00m	**118.0**	**580017000**

Mehrzweckriegel WS10 Top50

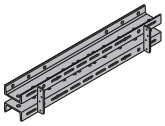
Painted blue



Multi-purpose waling WU12 Top50 1.00m	**25.3**	**580018000**
Multi-purpose waling WU12 Top50 1.25m	**32.0**	**580019000**
Multi-purpose waling WU12 Top50 1.50m	**37.5**	**580020000**
Multi-purpose waling WU12 Top50 1.75m	**44.2**	**580021000**
Multi-purpose waling WU12 Top50 2.00m	**50.0**	**580022000**
Multi-purpose waling WU12 Top50 2.50m	**63.1**	**580023000**
Multi-purpose waling WU12 Top50 3.00m	**75.7**	**580024000**
Multi-purpose waling WU12 Top50 3.50m	**90.7**	**580025000**
Multi-purpose waling WU12 Top50 4.00m	**103.4**	**580026000**

Mehrzweckriegel WU12 Top50

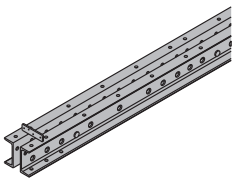
Painted blue



Multi-purpose waling SL-1 WU16 0.625m	**24.0**	**582875000**
Multi-purpose waling SL-1 WU16 0.75m	**26.5**	**582876000**
Multi-purpose waling SL-1 WU16 1.00m	**35.0**	**582877000**
Multi-purpose waling SL-1 WU16 1.25m	**44.5**	**582878000**
Multi-purpose waling SL-1 WU16 1.50m	**53.0**	**582879000**
Multi-purpose waling SL-1 WU16 1.75m	**67.0**	**582880000**
Multi-purpose waling SL-1 WU16 2.00m	**72.1**	**582881000**
Multi-purpose waling SL-1 WU16 2.25m	**86.0**	**582882000**
Multi-purpose waling SL-1 WU16 2.50m	**89.9**	**582883000**
Multi-purpose waling SL-1 WU16 3.00m	**107.0**	**582888000**

Mehrzweckriegel SL-1

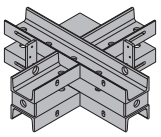
Painted blue



Corner waling 20 **23.5** **580031000**

Eckriegel 20

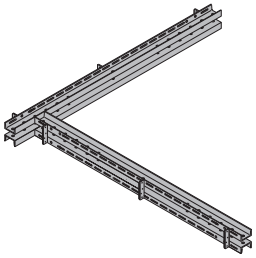
Painted blue
Length: 52 cm
Width: 52 cm



Shaft corner waling WS10 Top50 .....m **20.5** **580069000**

Eckwandriegel WS10 Top50 .....m

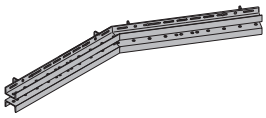
Painted blue
Project-specific!
Also available in profiles of thickness U120 (Order designation: WU12).



	[kg]	Article N°
Angular waling WS10 Top50 .....m	**21.5**	**580068000**

Winkelriegel WS10 Top50 .....m

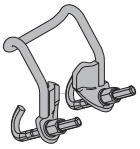
Painted blue
Project-specific!
Also available in profiles of thickness U120 (Order designation: WU12).



Flange clamp H20 **1.0** **580135000**

Flanschklammer H20

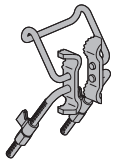
Galvanised
Width: 13 cm
Width-across: 19 mm



Flange clamp G **1.1** **580120000**

Flanschklammer G

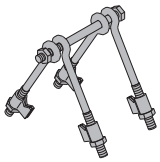
Galvanised
Width: 13 cm
Width-across: 19 mm



Flange claw **1.0** **580137000**

Flanschkralle

Galvanised
Width: 17 cm
Width-across: 18 mm



Waling clamp H20 **0.22** **580114000**

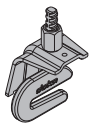
Riegelklammer H20

Galvanised
Width: 8 cm
Width-across: 13 mm

Waling clamp 2G **0.45** **580118000**

Riegelklammer 2G

Galvanised
Width: 7.7 cm
Height: 12 cm
Width-across: 19 mm



Beam screw S 8/70 **0.06** **580116500**

Riegelverschraubung S 8/70

Galvanised
Length: 8 cm
Width-across: 13 mm

Beam screw H 8/70 **0.06** **580117000**

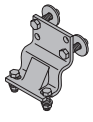
Riegelverschraubung H 8/70

Galvanised
Length: 8 cm
Width-across: 13 mm

Fastening plate **2.7** **580110000**

Anschraublasche

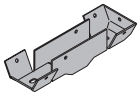
Painted blue
Width: 13 cm
Height: 15 cm
Width-across: 24 mm

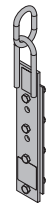
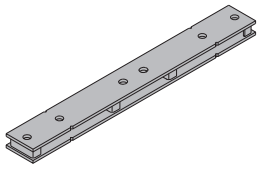
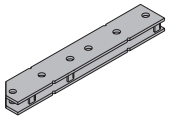
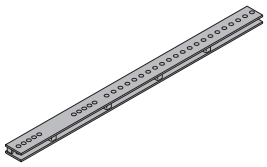
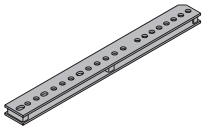
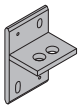
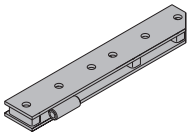
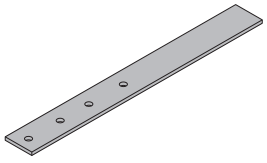


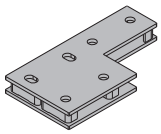
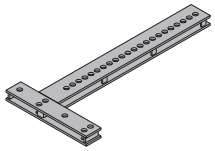
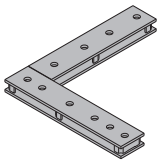
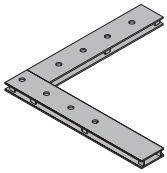
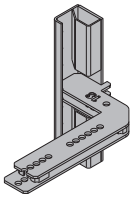
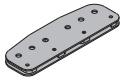
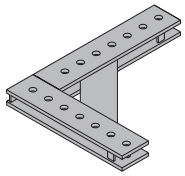
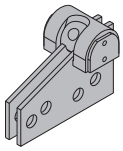
Protective cap H20 **0.36** **587248000**

Stirnschuh H20

Galvanised
Length: 20 cm
Width: 7 cm



	[kg]	Article N°
Lifting bracket Kranöse  Galvanised Height: 59 cm Follow the directions in the "Operating Instructions"! CE	**6.2**	**580460000**
Splice plate Top50 Z Verbindungslasche Top50 Z  Painted blue Length: 76 cm	**8.5**	**580074000**
Formwork element connector FF20/50 Z Elementverbinder FF20/50 Z  Painted blue Length: 55 cm	**6.0**	**587533000**
Adjustable waling extension 1.40m Top50 Ausgleichslasche 1,40m Top50  Painted blue	**15.0**	**580075000**
Adjustable waling extension FF20/50 Ausgleichslasche FF20/50  Painted blue Length: 87 cm	**9.1**	**587532000**
Beam clamp Top50 Trägerklammer Top50  Painted blue Height: 15 cm	**1.2**	**580081000**
Anchoring plate FF20/50 Ankerungslasche FF20/50  Painted blue Length: 55 cm	**6.6**	**587531000**
Half splice plate Halblasche  Painted blue Length: 78 cm	**5.2**	**580267000**

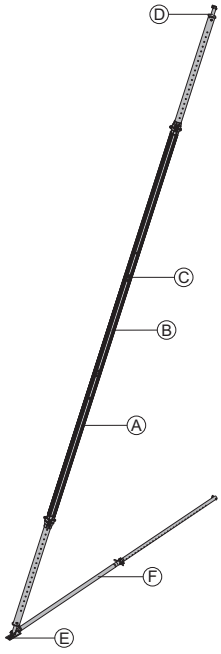
	[kg]	Article N°
Offset plate FF20 Versatzlasche FF20  Painted blue Length: 35 cm Width: 18 cm Height: 4 cm	**6.2**	**587534000**
Internal angle plate H20 Top50 Innenecklasche H20 Top50  Painted blue Length: 80 cm Width: 38 cm	**11.3**	**580035000**
Corner plate H20/H36 Top50 Ecklasche H20/H36 Top50  Painted blue Length: 49.7 cm Width: 45.1 cm	**10.0**	**580078000**
Shaft waling squaring plate Verschiebelasche  Painted blue Length: 60 cm Width: 60 cm	**9.6**	**580262000**
Transition plate 18mm **16.0** **588654000** **Transition plate 21mm** **15.8** **588656000** **Transition plate 27mm** **14.7** **588658000** Übergangslasche  Painted blue Length: 54 cm Width: 30 cm Height: 51 cm		
Waling connector SL-1 WU16 0.75m Riegelverbinder SL-1 WU16 0,75m  Galvanised Length: 75 cm	**31.0**	**582886000**
Corner connecting plate 90/50 Winkellasche 90/50  Painted blue Length: 51 cm Width: 40 cm	**13.8**	**580603000**
Universal angle tie bracket Universal-Winkelspanner  Painted blue Length: 20 cm	**4.4**	**580604000**

	[kg]	Article N°
Angle tie bracket 20.0 SL-1 WU16 Winkelspanner 20,0 SL-1 WU16 Painted blue Length: 24 cm	8.1	587543000
Swivel joint plate Drehgelenklasche Galvanised Length: 155 cm	20.0	587542000
Connecting pin 10cm Verbindungsbolzen 10cm Galvanised Length: 14 cm	0.34	580201000
Connecting pin 25cm Verbindungsbolzen 25cm Galvanised Length: 25 cm	0.58	580202000
Spring cotter 5mm Federvorstecker 5mm Galvanised Length: 13 cm	0.03	580204000
Stacking plate H20 Aufstocklasche H20 Galvanised Length: 68.8 cm Width-across: 30 mm	8.3	580310000
T ledge 21/42 2.00m T-Leiste 21/42 2,00m Grey	0.34	580196000
Box-out clamp type 1 .....cm Aussparungsklemme Typ 1 .....cm Painted blue Length: 10 cm Width: 10 cm	17.4	580066000
Box-out clamp type 2 .....cm Aussparungsklemme Typ 2 .....cm Painted blue Length: 10 cm Width: 10 cm	17.4	580067000

	[kg]	Article N°
Wall-formwork support angle 2G Auflagewinkel Wandschalung 2G Galvanised	7.0	589251000
Wall-formwork support angle Auflagewinkel Wandschalung Galvanised Length: 15.8 cm Width: 12 cm Height: 28 cm	6.6	588967000
Panel strut 340 IB Elementstütze 340 IB consisting of:	24.3	580365000
(A) **Plumbing strut 340 IB** Galvanised Length: 190.8 - 341.8 cm	16.7	588696000
(B) **Adjusting strut 120 IB** Galvanised Length: 81.5 - 130.6 cm	7.6	588248500
Galvanised Delivery condition: folded closed		
Panel strut 540 IB Elementstütze 540 IB consisting of:	41.4	580366000
(A) **Plumbing strut 540 IB** Galvanised Length: 310.5 - 549.2 cm	30.7	588697000
(B) **Adjusting strut 220 IB** Galvanised Length: 172.5 - 221.1 cm	10.9	588251500
Galvanised Delivery condition: folded closed		

	[kg]	Article N°
Eurex 60 550 Eurex 60 550 depending on length, comprising:		
(A) **Plumbing strut Eurex 60 550** Powder-coated blue Aluminium Length: 343 - 553 cm	**42.5**	**582658000**
(B) **Extension Eurex 60 2.00m** Powder-coated blue Aluminium Length: 250 cm	**21.3**	**582651000**
(C) **Coupler Eurex 60** Aluminium Length: 100 cm Diameter: 12.8 cm	**8.6**	**582652000**
(D) **Connector Eurex 60 IB** Galvanised Length: 15 cm Width: 15 cm Height: 30 cm	**4.2**	**582657500**
(E) **Plumbing strut shoe Eurex 60 EB** Galvanised Length: 31 cm Width: 12 cm Height: 33 cm	**8.0**	**582660500**
(F) **Adjusting strut 540 Eurex 60 IB** Galvanised Length: 303.5 - 542.2 cm	**27.8**	**582659500**

Delivery condition: separate parts



Prop head EB Stützenkopf EB Galvanised Length: 40.8 cm Width: 11.8 cm Height: 17.6 cm	**3.1**	**588244500**
Prop head Eurex 60 Top50 Stützenkopf Eurex 60 Top50 Galvanised Height: 50 cm	**7.1**	**582665000**
Universal dismantling tool Universal-Lösewerkzeug Galvanised Length: 75.5 cm	**3.6**	**582768000**

Doka express anchor 16x125mm Doka-Expressanker 16x125mm Galvanised Length: 18 cm	**0.31**	**588631000**
Doka coil 16mm Doka-Coil 16mm Galvanised Diameter: 1.6 cm	**0.009**	**588633000**
Information plate for express anchor Plakette Expressanker PS Width: 8 cm Height: 7.5 cm	**0.1**	**588630000**
Universal bracket 90 Universal-Konsole 90 Galvanised Length: 121 cm Height: 235 cm	**30.4**	**580476000**
Top scaffold bracket L Betonierkonsole L Galvanised Length: 101 cm Height: 159 cm	**12.6**	**587153500**
Bracket railing 240-270cm Konsolengeländer 240-270cm Galvanised	**22.5**	**583032000**
Universal railing shackle Universal-Geländerbügel Galvanised Height: 20 cm	**3.0**	**580478000**
Scaffold tube connection Gerüstrohranschluss Galvanised Height: 7 cm	**0.27**	**584375000**

	[kg]	Article N°
Scaffold tube 48.3mm 0.50m	**1.7**	**682026000**
Scaffold tube 48.3mm 1.00m	**3.6**	**682014000**
Scaffold tube 48.3mm 1.50m	**5.4**	**682015000**
Scaffold tube 48.3mm 2.00m	**7.2**	**682016000**
Scaffold tube 48.3mm 2.50m	**8.4**	**682017000**
Scaffold tube 48.3mm 3.00m	**10.8**	**682018000**
Scaffold tube 48.3mm 3.50m	**12.6**	**682019000**
Scaffold tube 48.3mm 4.00m	**14.4**	**682021000**
Scaffold tube 48.3mm 4.50m	**16.2**	**682022000**
Scaffold tube 48.3mm 5.00m	**18.0**	**682023000**
Scaffold tube 48.3mm 5.50m	**19.8**	**682024000**
Scaffold tube 48.3mm 6.00m	**21.6**	**682025000**
Scaffold tube 48.3mm .....m	**3.6**	**682001000**

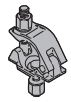
Gerüstrohr 48,3mm

Galvanised

Screw-on coupler 48mm 50 — **0.8** — **682002000**

Anschraubkupplung 48mm 50

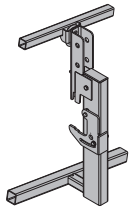
Galvanised
Width-across: 22 mm



Xsafe plus lifting adapter for beam formwork — **14.0** — **586439000**

Xsafe plus-Umsetzadapter Trägerschalung

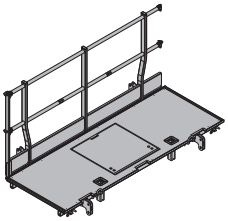
Galvanised
Width: 66 cm
Height: 89 cm



Xsafe plus platform 2.50m — **144.5** — **586405000**

Xsafe plus-Bühne 2,50m

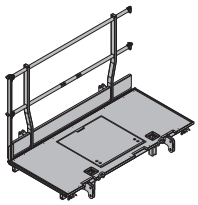
Steel parts galvanised
Timber parts varnished yellow
Height: 136 cm
Delivery condition: folded closed



Xsafe plus platform 2.00m — **122.5** — **586407000**

Xsafe plus-Bühne 2,00m

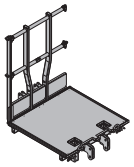
Steel parts galvanised
Timber parts varnished yellow
Height: 136 cm
Delivery condition: folded closed



Xsafe plus platform 1.00m — **78.5** — **586409000**

Xsafe plus-Bühne 1,00m

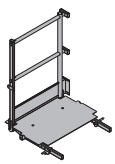
Steel parts galvanised
Timber parts varnished yellow
Height: 136 cm
Delivery condition: folded closed



Xsafe plus platform extension 0.60m — **43.4** — **586418000**

Xsafe plus-Bühnenverlängerung 0,60m

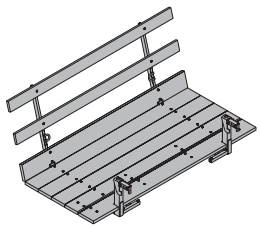
Galvanised
Height: 120 cm
Delivery condition: railing included



	[kg]	Article N°
Framax pouring platform U 1.25/2.70m	**127.5**	**588377000**

Framax-Betonierbühne U 1,25/2,70m

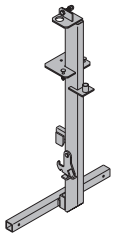
Steel parts galvanised
Timber parts varnished yellow
Delivery condition: folded closed



Top50 adapter for Framax pouring platform U — **18.5** — **588384000**

Top50-Adapter für Framax-Betonierbühne U

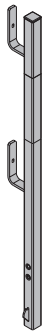
Galvanised
Width: 75 cm
Height: 134 cm



Handrail post XP 1.20m — **4.1** — **586460000**

Geländersteher XP 1,20m

Galvanised
Height: 118 cm



Toeboard holder XP 1.20m — **0.64** — **586461000**

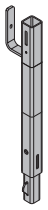
Fußwehrhalter XP 1,20m

Galvanised
Height: 21 cm

Handrail post XP 0.60m — **5.0** — **586462000**

Geländersteher XP 0,60m

Galvanised
Height: 68 cm

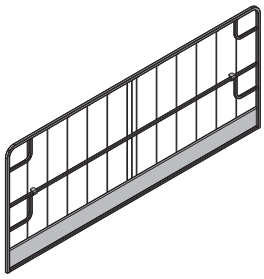


Toeboard holder XP 0.60m — **0.77** — **586463000**

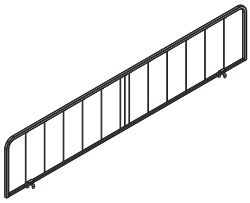
Fußwehrhalter XP 0,60m

Galvanised
Height: 21 cm

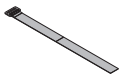
	[kg]	Article N°
Protective grating XP 2.70x1.20m	**22.2**	**586450000**
Protective grating XP 2.50x1.20m	**20.5**	**586451000**
Protective grating XP 2.00x1.20m	**17.4**	**586452000**
Protective grating XP 1.20x1.20m	**12.0**	**586453000**
Schutzgitter XP		
Galvanised		



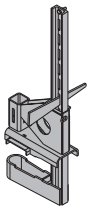
Protective grating XP 2.70x0.60m	**10.1**	**586466000**
Protective grating XP 2.50x0.60m	**9.5**	**586472000**
Protective grating XP 2.00x0.60m	**8.0**	**586473000**
Protective grating XP 1.20x0.60m	**5.0**	**586491000**
Schutzgitter XP		
Galvanised		



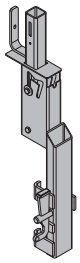
Velcro fastener 30x380mm	**0.02**	**586470000**
Klettverschluss 30x380mm		
Yellow		



Railing clamp XP 40cm	**7.7**	**586456000**
Geländerzwinge XP 40cm		
Galvanised		
Height: 73 cm		

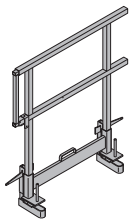


Timber-beam formwork adapter XP	**9.5**	**586476000**
Trägerschalungsadapter XP		
Galvanised		
Height: 83.5 cm		

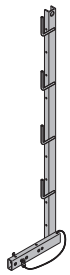


Handrail clamp S	**11.5**	**580470000**
Schutzgeländerzwinge S		
Galvanised		
Height: 123 - 171 cm		

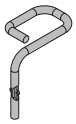
	[kg]	Article N°
Side handrail clamping unit T	**29.1**	**580488000**
Seitenschutzgeländer T		
Galvanised		
Length: 115 - 175 cm		
Height: 112 cm		



Handrail post T 1.80m	**17.7**	**584373000**
Einschubgeländer T 1,80m		
Galvanised		



Toeboard holder T 1.80m	**0.53**	**584392000**
Fußwehrhalter T 1,80m		
Galvanised		
Height: 13.5 cm		

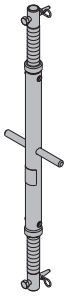


Doka 4-part chain 3.20m	**15.0**	**588620000**
Doka-Vierstrangkette 3,20m		
Follow the directions in the "Operating Instructions"!		

Universal strut T5/5 .....mm	**6.5**	**584311000**
Strebe T5/5 .....mm		
Painted blue		
Weight per linear metre		

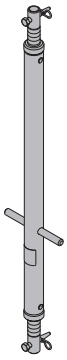
Spindle strut GS T5 65/101cm	**9.1**	**584356000**
Spindelstrebe GS T5 65/101cm		
Galvanised		

	[kg]	Article N°
Spindle strut T6 73/110cm	**10.2**	**584355000**
Spindle strut T6 100/150cm	**12.5**	**584323000**
Spindelstrebe T6		
Galvanised		

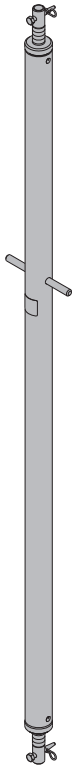


Spindle strut GS T6 95/140cm	**10.3**	**584340000**
Spindelstrebe GS T6 95/140cm		
Galvanised		

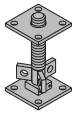
Spindle strut T7 75/110cm	**13.2**	**584308000**
Spindle strut T7 100/150cm	**16.8**	**584309000**
Spindle strut T7 150/200cm	**21.6**	**584324000**
Spindle strut T7 200/250cm	**26.2**	**584325000**
Spindle strut T7 250/300cm	**29.4**	**584326000**
Spindle strut T7 305/355cm	**35.0**	**584327000**
Spindelstrebe T7		
Galvanised		



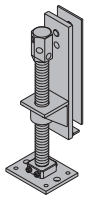
Spindle strut T10 350/400cm	**57.5**	**584328000**
Spindle strut T10 .....mm	**16.9**	**584391000**
Spindelstrebe T10		



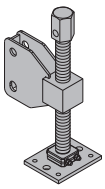
Universal spindle foot T8	**8.6**	**584314000**
Universal-Spindelfuß T8		
Painted blue		
Galvanised		
Height: 30 cm		



Height adjuster for formwork beams	**11.9**	**580218000**
Höhenjustierung für Schalungsträger		
Galvanised		
Height: 46 cm		



Height adjuster WS10-WU16	**10.1**	**580206500**
Höhenjustierung WS10-WU16		
Galvanised		
Height: 45 cm		



Adjusting spindle M36	**6.2**	**500663002**
Höhenjustierspindel M36		
Galvanised		
Length: 31 cm		
Height: 29.2 cm		
Width-across: 24 mm		

	[kg]	Article N°
Universal suspension head Universal-Aufhängekopf Galvanised Length: 36.5 cm Width: 16 cm Height: 32.1 cm	**14.0**	**580408000**
Safety wedge for universal suspension head Sicherungskeil Universal-Aufhängekopf Galvanised Length: 30 cm	**0.7**	**580409000**
Suspension head WS10 Aufhängekopf WS10 Galvanised Length: 21 cm Width: 18 cm Height: 23 cm	**8.1**	**580449000**
Universal support Top50 .....mm Tragwerklasche Top50 .....mm Painted blue Weight per linear metre	**11.1**	**584312000**
Adjusting plate T Justierlasche T Painted blue Length: 23.5 cm	**6.5**	**584393000**

	[kg]	Article N°
Tool box GF GF-Werkzeugbox included in scope of supply:	**7.2**	**580390000**
(A) **Reversible ratchet 1/2"** Galvanised	**0.73**	**580580000**
(B) **Ring spanner 13/15**	**0.25**	**580599000**
(C) **Ring spanner 16/18**	**0.23**	**580644000**
(D) **Ring spanner 17/19**	**0.27**	**580590000**
(E) **Combination wrench 36**	**0.75**	**582860000**
(F) **Fork wrench 30/32**	**0.8**	**580897000**
(G) **Fork wrench 22/24**	**0.22**	**580587000**
(H) **Fork wrench 13/17**	**0.08**	**580577000**
(I) **Extension 22cm 1/2"**	**0.31**	**580582000**
(J) **Extension 11cm 1/2"**	**0.2**	**580581000**
(K) **Universal joint coupling 1/2"**	**0.16**	**580583000**
(L) **Box nut 30 1/2"**	**0.2**	**580575000**
(M) **Box nut 24 1/2"**	**0.12**	**580584000**
(N) **Box nut 19 1/2" L**	**0.16**	**580598000**
(O) **Box nut 18 1/2" L**	**0.15**	**580642000**
(P) **Box nut 15 1/2"**	**0.09**	**580676000**
(Q) **Box nut 13 1/2"**	**0.06**	**580576000**
Filler neck GF SCC GF-Füllstutzen SCC Galvanised Length: 66 cm	**39.0**	**580217000**
Panel closure tool D125 SCC Sperrschieber D125 SCC Galvanised Length: 18 cm Width: 33 cm Height: 27 cm	**18.0**	**588127000**
Assembly angle Top50 Montagelasche Top50 Galvanised Length: 53.2 cm Width: 48.6 cm	**6.7**	**580082000**
Strip tensioner B 6.00m Bandzwinge B 6,00m Galvanised	**3.3**	**580394500**

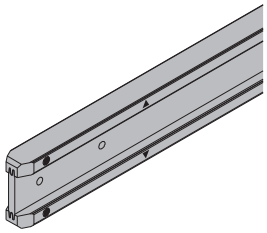
	[kg]	Article N°
Positioning rail .....m Führungsschiene .....m Painted blue Weight per linear metre	**1.8**	**580079000**
Hole gauge Top50 Bohrplatte Top50 Painted blue Length: 17 cm Width: 15 cm	**2.2**	**580080000**
Angle connector 9x5cm Winkelverbinder 9x5cm Galvanised	**0.22**	**580381000**
Rafter plate right **Rafter plate left** Sparrenpfettenanker Galvanised Length: 17 cm	**0.09** **0.09**	**582521000** **582522000**
Doka beam XT20 1.80m	**9.0**	**188031000**
Doka beam XT20 2.45m	**12.3**	**188033000**
Doka beam XT20 2.65m	**13.3**	**188034000**
Doka beam XT20 2.90m	**14.5**	**188035000**
Doka beam XT20 3.30m	**16.5**	**188036000**
Doka beam XT20 3.60m	**18.0**	**188037000**
Doka beam XT20 3.90m	**19.5**	**188038000**
Doka beam XT20 4.50m	**22.5**	**188039000**
Doka beam XT20 4.90m	**24.5**	**188040000**
Doka beam XT20 5.35m	**26.8**	**188041000**
Doka beam XT20 5.90m	**29.5**	**188042000**
Doka beam XT20 .....m	**5.0**	**188043000**
Doka beam XT20 .....m BS	**5.0**	**188044000**
Doka-Träger XT20 Varnished yellow Grey		
Doka beam H20 top N 1.80m	**8.5**	**189011000**
Doka beam H20 top N 2.45m	**11.5**	**189012000**
Doka beam H20 top N 2.65m	**12.5**	**189013000**
Doka beam H20 top N 2.90m	**13.6**	**189014000**
Doka beam H20 top N 3.30m	**15.5**	**189015000**
Doka beam H20 top N 3.60m	**16.9**	**189016000**
Doka beam H20 top N 3.90m	**18.3**	**189017000**
Doka beam H20 top N 4.50m	**21.2**	**189018000**
Doka beam H20 top N 4.90m	**23.0**	**189019000**
Doka beam H20 top N 5.90m	**27.7**	**189020000**
Doka beam H20 top N .....m	**4.7**	**189010000**
Doka beam H20 top N .....m BS	**4.7**	**189021000**
Doka-Träger H20 top N Varnished yellow		

	[kg]	Article N°
Doka beam H20 top P 1.80m	**9.5**	**189701000**
Doka beam H20 top P 2.45m	**13.0**	**189702000**
Doka beam H20 top P 2.65m	**14.1**	**189703000**
Doka beam H20 top P 2.90m	**15.4**	**189704000**
Doka beam H20 top P 3.30m	**17.5**	**189705000**
Doka beam H20 top P 3.60m	**19.1**	**189706000**
Doka beam H20 top P 3.90m	**20.7**	**189707000**
Doka beam H20 top P 4.50m	**23.9**	**189708000**
Doka beam H20 top P 4.90m	**26.0**	**189709000**
Doka beam H20 top P 5.90m	**31.3**	**189710000**
Doka beam H20 top P .....m	**5.3**	**189700000**
Doka beam H20 top P .....m BS	**5.3**	**189711000**
Doka-Träger H20 top P Varnished yellow		
Doka beam H20 pro N 1.80m	**7.9**	**189076000**
Doka beam H20 pro N 2.45m	**10.8**	**189077000**
Doka beam H20 pro N 2.65m	**11.7**	**189078000**
Doka beam H20 pro N 2.90m	**12.8**	**189079000**
Doka beam H20 pro N 3.30m	**14.5**	**189080000**
Doka beam H20 pro N 3.60m	**15.8**	**189081000**
Doka beam H20 pro N 3.90m	**17.2**	**189082000**
Doka beam H20 pro N 4.50m	**19.8**	**189083000**
Doka beam H20 pro N 4.90m	**21.6**	**189084000**
Doka beam H20 pro N 5.90m	**26.0**	**189085000**
Doka beam H20 pro N .....m	**4.4**	**189086000**
Doka beam H20 pro N .....m BS	**4.4**	**189087000**
Doka-Träger H20 pro N Varnished yellow		
Doka beam H20 eco N 1.80m	**8.5**	**189283000**
Doka beam H20 eco N 2.45m	**11.5**	**189271000**
Doka beam H20 eco N 2.65m	**12.5**	**189272000**
Doka beam H20 eco N 2.90m	**13.6**	**189273000**
Doka beam H20 eco N 3.30m	**15.5**	**189284000**
Doka beam H20 eco N 3.60m	**16.9**	**189285000**
Doka beam H20 eco N 3.90m	**18.3**	**189276000**
Doka beam H20 eco N 4.50m	**21.2**	**189286000**
Doka beam H20 eco N 4.90m	**23.0**	**189277000**
Doka beam H20 eco N 5.90m	**27.7**	**189287000**
Doka beam H20 eco N .....m	**4.7**	**189299000**
Doka beam H20 eco N .....m BS	**4.7**	**189289000**
Doka-Träger H20 eco N Varnished yellow		
Doka beam H20 eco N 1.25m	**5.9**	**189282000**
Doka beam H20 eco N 12.00m	**56.4**	**189288000**
Doka-Träger H20 eco N Varnished yellow		

	[kg]	Article N°
Doka beam H20 eco P 1.80m	**9.5**	**189940000**
Doka beam H20 eco P 2.45m	**13.0**	**189936000**
Doka beam H20 eco P 2.65m	**14.1**	**189937000**
Doka beam H20 eco P 2.90m	**15.4**	**189930000**
Doka beam H20 eco P 3.30m	**17.5**	**189941000**
Doka beam H20 eco P 3.60m	**19.1**	**189942000**
Doka beam H20 eco P 3.90m	**20.7**	**189931000**
Doka beam H20 eco P 4.50m	**23.9**	**189943000**
Doka beam H20 eco P 4.90m	**26.0**	**189932000**
Doka beam H20 eco P 5.90m	**31.3**	**189955000**
Doka beam H20 eco P .....m	**5.3**	**189999000**
Doka beam H20 eco P .....m BS	**5.3**	**189957000**

Doka-Träger H20 eco P

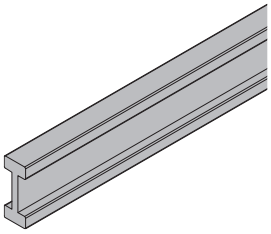
Varnished yellow



Doka beam H20 eco P 1.25m	**6.6**	**189939000**
Doka beam H20 eco P 12.00m	**63.6**	**189993000**

Doka-Träger H20 eco P

Varnished yellow



Doka formwork sheet 3-SO 21mm 100/50cm	**4.9**	**186007000**
Doka formwork sheet 3-SO 21mm 150/50cm	**7.3**	**186008000**
Doka formwork sheet 3-SO 21mm 200/50cm	**9.7**	**186009000**
Doka formwork sheet 3-SO 21mm 250/50cm	**12.1**	**186011000**
Doka formwork sheet 3-SO 21mm 300/50cm	**14.6**	**186012000**
Doka formwork sheet 3-SO 21mm 350/50cm	**17.0**	**186028000**
Doka formwork sheet 3-SO 21mm 400/50cm	**19.4**	**186013000**
Doka formwork sheet 3-SO 21mm 450/50cm	**21.8**	**186029000**
Doka formwork sheet 3-SO 21mm 550/50cm	**26.7**	**186023000**
Doka formwork sheet 3-SO 21mm 600/50cm	**29.1**	**186027000**
Doka formwork sheet 3-SO 21mm 100/100cm	**9.7**	**186015000**
Doka formwork sheet 3-SO 21mm 150/100cm	**14.6**	**186016000**
Doka formwork sheet 3-SO 21mm 200/100cm	**19.4**	**186017000**
Doka formwork sheet 3-SO 21mm 250/100cm	**24.3**	**186018000**
Doka formwork sheet 3-SO 21mm 300/100cm	**29.1**	**186019000**
Doka formwork sheet 3-SO 21mm 350/100cm	**34.0**	**186030000**
Doka formwork sheet 3-SO 21mm 400/100cm	**38.8**	**186020000**
Doka formwork sheet 3-SO 21mm 450/100cm	**43.7**	**186031000**
Doka formwork sheet 3-SO 21mm 500/100cm	**48.5**	**186021000**
Doka formwork sheet 3-SO 21mm 550/100cm	**53.4**	**186022000**
Doka formwork sheet 3-SO 21mm 600/100cm	**58.2**	**186024000**
Doka formwork sheet 3-SO 21mm 250/125cm	**30.3**	**186097000**
Doka formwork sheet 3-SO 21mm 300/150cm	**43.7**	**186098000**
Doka formwork sheet 3-SO 21mm 600/150cm	**87.3**	**186099000**
Doka formwork sheet 3-SO 21mm 150/50cm BS	**7.3**	**186008100**
Doka formwork sheet 3-SO 21mm 200/50cm BS	**9.7**	**186009100**
Doka formwork sheet 3-SO 21mm 250/50cm BS	**12.1**	**186011100**
Doka formwork sheet 3-SO 21mm 300/50cm BS	**14.6**	**186012100**

Doka Schalungsplatte 3-SO 21mm

	[kg]	Article N°
Doka formwork sheet 3-SO 27mm 100/50cm	**6.1**	**187007000**
Doka formwork sheet 3-SO 27mm 150/50cm	**9.1**	**187008000**
Doka formwork sheet 3-SO 27mm 200/50cm	**12.1**	**187009000**
Doka formwork sheet 3-SO 27mm 250/50cm	**15.1**	**187011000**
Doka formwork sheet 3-SO 27mm 300/50cm	**18.2**	**187012000**
Doka formwork sheet 3-SO 27mm 350/50cm	**21.2**	**187028000**
Doka formwork sheet 3-SO 27mm 400/50cm	**24.2**	**187013000**
Doka formwork sheet 3-SO 27mm 450/50cm	**27.2**	**187029000**
Doka formwork sheet 3-SO 27mm 500/50cm	**30.3**	**187014000**
Doka formwork sheet 3-SO 27mm 550/50cm	**33.3**	**187023000**
Doka formwork sheet 3-SO 27mm 600/50cm	**36.3**	**187027000**
Doka formwork sheet 3-SO 27mm 100/100cm	**12.1**	**187015000**
Doka formwork sheet 3-SO 27mm 150/100cm	**18.2**	**187016000**
Doka formwork sheet 3-SO 27mm 200/100cm	**24.2**	**187017000**
Doka formwork sheet 3-SO 27mm 250/100cm	**30.3**	**187018000**
Doka formwork sheet 3-SO 27mm 300/100cm	**36.3**	**187019000**
Doka formwork sheet 3-SO 27mm 350/100cm	**42.4**	**187030000**
Doka formwork sheet 3-SO 27mm 400/100cm	**48.4**	**187020000**
Doka formwork sheet 3-SO 27mm 450/100cm	**54.5**	**187031000**
Doka formwork sheet 3-SO 27mm 500/100cm	**60.5**	**187021000**
Doka formwork sheet 3-SO 27mm 550/100cm	**66.6**	**187022000**
Doka formwork sheet 3-SO 27mm 600/100cm	**72.6**	**187024000**
Doka formwork sheet 3-SO 27mm 250/125cm	**37.8**	**187106000**
Doka formwork sheet 3-SO 27mm 300/150cm	**54.5**	**187107000**
Doka formwork sheet 3-SO 27mm 600/150cm	**108.9**	**187108000**
Doka formwork sheet 3-SO 27mm 150/50cm BS	**9.1**	**187008100**
Doka formwork sheet 3-SO 27mm 200/50cm BS	**12.1**	**187009100**
Doka formwork sheet 3-SO 27mm 250/50cm BS	**15.1**	**187011100**
Doka formwork sheet 3-SO 27mm 300/50cm BS	**18.2**	**187012100**

Doka-Schalungsplatte 3-SO 27mm

Dokaplex formwork sheet 9mm 250/150cm	**24.4**	**185001000**
Dokaplex formwork sheet 9mm 300/150cm	**29.3**	**185006000**

Dokaplex-Schalungsplatte 9mm

Dokaplex formwork sheet 18mm 250/150cm	**47.3**	**185011000**
Dokaplex formwork sheet 18mm 300/150cm	**56.7**	**185012000**

Dokaplex-Schalungsplatte 18mm

Dokaplex formwork sheet 21mm 250/125cm	**45.9**	**185007000**
Dokaplex formwork sheet 21mm 250/150cm	**55.1**	**185002000**
Dokaplex formwork sheet 21mm 300/150cm	**66.2**	**185003000**

Dokaplex-Schalungsplatte 21mm

Xlife sheet 21mm 265/145cm	**63.4**	**185071000**
Xlife sheet 21mm 325/145cm	**77.8**	**185070000**

Xlife-Platte 21mm

Xface sheet 21mm 202/302cm	**91.5**	**185050000**
Xface sheet 21mm 202/402cm	**121.8**	**185076000**
Xface sheet 21mm 202/502cm	**152.1**	**185077000**

Xface-Platte 21mm

Edge varnish SW-910 RAL 7004 2.5l	**2.9**	**185019000**

Kantenlack SW-910 RAL 7004 2,5l

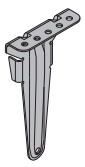
Shaping wood board 3-S 27mm 600/150cm	**108.9**	**177047000**

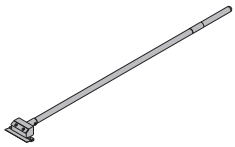
Formholzplatte 3-S 27mm 600/150cm

H20 screw-on bracket for formwork sheets	**0.19**	**586256000**

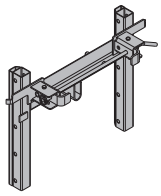
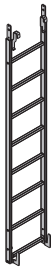
Schalhaut-Schraubwinkel H20

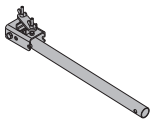
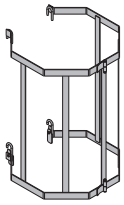
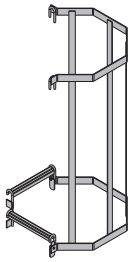
Galvanised
Height: 19.2 cm



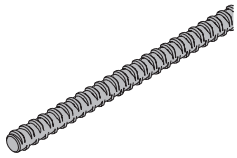
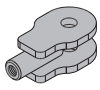
	[kg]	Article N°
Double scraper Xlife 100/150mm 1.40m Doppelschaber Xlife 100/150mm 1,40m	**2.8**	**588674000**
		
Tie-off connector type A Anhängewinkel Typ A Galvanised Length: 13.7 cm	**0.96**	**581641000**
		
Tie-off set PPE type A Anhängeset PSA Typ A	**0.49**	**589199500**
		

Ladder system XS

Connector XS wall formwork Anschluss XS Wandschalung Galvanised Width: 89 cm Height: 63 cm	**20.8**	**588662000**
		
System ladder XS 4.40m System-Leiter XS 4,40m Galvanised	**33.2**	**588640000**
		
Ladder extension XS 2.30m Leiternverlängerung XS 2,30m Galvanised	**19.1**	**588641000**
		

	[kg]	Article N°
Securing barrier XS Sicherungsschranke XS Galvanised Length: 80 cm	**4.9**	**588669000**
		
Ladder cage XS 1.00m **Ladder cage XS 0.25m** Rückenschutz XS Galvanised	**16.5** **10.5**	**588643000** **588670000**
		
Ladder cage exit XS Rückenschutz-Ausstieg XS Galvanised Height: 132 cm	**17.0**	**588666000**
		

Tie rod system 15.0

Tie rod 15.0mm galvanised 0.50m	**0.72**	**581821000**
Tie rod 15.0mm galvanised 0.75m	**1.1**	**581822000**
Tie rod 15.0mm galvanised 1.00m	**1.4**	**581823000**
Tie rod 15.0mm galvanised 1.25m	**1.8**	**581826000**
Tie rod 15.0mm galvanised 1.50m	**2.2**	**581827000**
Tie rod 15.0mm galvanised 1.75m	**2.5**	**581828000**
Tie rod 15.0mm galvanised 2.00m	**2.9**	**581829000**
Tie rod 15.0mm galvanised 2.50m	**3.6**	**581852000**
Tie rod 15.0mm galvanised .....m	**1.4**	**581824000**
Tie rod 15.0mm non-treated 0.50m	**0.73**	**581870000**
Tie rod 15.0mm non-treated 0.75m	**1.1**	**581871000**
Tie rod 15.0mm non-treated 1.00m	**1.4**	**581874000**
Tie rod 15.0mm non-treated 1.25m	**1.8**	**581886000**
Tie rod 15.0mm non-treated 1.50m	**2.1**	**581876000**
Tie rod 15.0mm non-treated 1.75m	**2.5**	**581887000**
Tie rod 15.0mm non-treated 2.00m	**2.9**	**581875000**
Tie rod 15.0mm non-treated 2.50m	**3.6**	**581877000**
Tie rod 15.0mm non-treated 3.00m	**4.3**	**581878000**
Tie rod 15.0mm non-treated 3.50m	**5.0**	**581888000**
Tie rod 15.0mm non-treated 4.00m	**5.7**	**581879000**
Tie rod 15.0mm non-treated 5.00m	**7.2**	**581880000**
Tie rod 15.0mm non-treated 6.00m	**8.6**	**581881000**
Tie rod 15.0mm non-treated .....m	**1.4**	**581873000**
Ankerstab 15,0mm		
		DIN 18216
Eye-lug anchor 15.0 without tie rod Ösenanker 15,0 ohne Ankerstab Galvanised Length: 11 cm	**1.2**	**580649000**
		

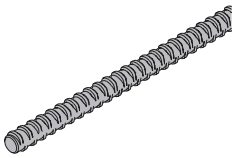
	[kg]	Article N°
Super plate 15.0 Superplatte 15,0 Galvanised Height: 6 cm Diameter: 12 cm Width-across: 27 mm DIN 18216	**0.98**	**581966000**
Wing nut 15.0 Flügelmutter 15,0 Galvanised Length: 10 cm Height: 5 cm Width-across: 27 mm DIN 18216	**0.31**	**581961000**
Hexagon nut 15.0 Sechskantmutter 15,0 Galvanised Length: 5 cm Width-across: 30 mm DIN 18216	**0.23**	**581964000**
Locking rod 15.0 330mm Quetschteil 15,0 330mm Galvanised Width-across: 24 mm	**0.48**	**582641000**
Anchor plate 12/12 Ankerplatte 12/12 Galvanised DIN 18216	**1.3**	**581930000**
Anchor plate 15/20 Ankerplatte 15/20 Galvanised DIN 18216	**1.8**	**581929000**
Angle anchor plate 12/18 Winkelplatte 12/18 Galvanised DIN 18216	**1.5**	**581934000**
Top50 form-tie nut 15.0 Top50-Ankermutter 15,0 Galvanised Height: 25 cm	**3.8**	**580073000**
Plastic tube 22mm 2.50m Kunststoffrohr 22mm 2,50m PVC Grey Diameter: 2.6 cm	**0.45**	**581951000**
Universal cone 22/10mm Universal-Konus 22/10mm Grey Diameter: 4 cm	**0.005**	**581995000**
Plug 22mm Verschlussstopfen 22mm PE Grey	**0.003**	**581953000**

	[kg]	Article N°
Universal plug R20/25 Kombi-Ankerstopfen R20/25 Blue Diameter: 3 cm	**0.003**	**588180000**
Distance piece 20cm **Distance piece 25cm** **Distance piece 30cm** Distanzhalter PE Grey Blue	**0.04** **0.05** **0.06**	**581907000** **581908000** **581909000**
Form-ply protector 22mm Schalhautschutz 22mm Galvanised Width-across: 46 mm	**0.25**	**580219000**
Protective cap 15.0/20.0 Schutzkappe 15,0/20,0 Yellow Length: 6 cm Diameter: 6.7 cm	**0.03**	**581858000**
Tie-rod wrench 15.0/20.0 Ankerstabschlüssel 15,0/20,0 Galvanised	**1.8**	**580594000**
Friction type ratchet SW27 Freilaufknarre SW27 Manganese-phosphated Length: 30 cm	**0.49**	**581855000**
Box spanner 27 0.65m Steckschlüssel 27 0,65m Galvanised	**1.9**	**581854000**

Tie rod system 20.0

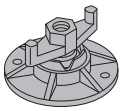
	[kg]	Article N°
Tie rod 20.0mm galvanised 0.50m	1.3	581411000
Tie rod 20.0mm galvanised 0.75m	1.9	581417000
Tie rod 20.0mm galvanised 1.00m	2.5	581412000
Tie rod 20.0mm galvanised 1.25m	3.2	581418000
Tie rod 20.0mm galvanised 1.50m	3.8	581413000
Tie rod 20.0mm galvanised 2.00m	5.0	581414000
Tie rod 20.0mm galvanised 2.50m	6.3	581430000
Tie rod 20.0mm galvanised .....m	2.5	581410000
Tie rod 20.0mm non-treated 0.50m	1.3	581405000
Tie rod 20.0mm non-treated 0.75m	1.9	581416000
Tie rod 20.0mm non-treated 1.00m	2.5	581406000
Tie rod 20.0mm non-treated 1.50m	3.8	581407000
Tie rod 20.0mm non-treated 2.00m	5.0	581408000
Tie rod 20.0mm non-treated .....m	2.5	581403000

Ankerstab 20,0mm



DIN 18216

Super plate 20.0 B 2.0 581424000
Superplatte 20,0 B



Galvanised
Height: 7 cm
Diameter: 14 cm
Width-across: 34 mm

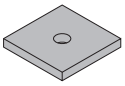
DIN 18216

Hexagon nut 20.0 0.4 581420000
Sechskantmutter 20,0

Galvanised
Length: 7 cm
Width-across: 41 mm

DIN 18216

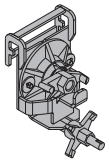
Anchor plate 20.0 1.5 581425000
Ankerplatte 20,0



Galvanised

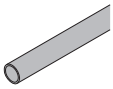
DIN 18216

Top100 tec form-tie nut 20.0 4.8 586934000
Top100 tec-Ankermutter 20,0



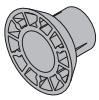
Galvanised
Height: 25 cm

Plastic tube 26mm 2.00m 0.59 581463000
Kunststoffrohr 26mm 2,00m



PVC
Grey
Diameter: 3.1 cm

Universal cone 26/10mm 0.008 581464000
Universal-Konus 26/10mm

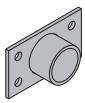


Grey
Diameter: 5 cm

Plug 26mm 0.006 581465000
Verschlussstopfen 26mm

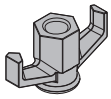
PE
Grey

Tie hole protector 20.0 0.11 586931000
Ankerlochschutz 20,0



Galvanised
Length: 7.5 cm
Width: 4.3 cm

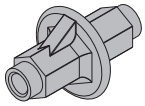
Wing nut 20.0 0.47 581466000
Flügelmutter 20,0



Galvanised
Length: 11 cm
Height: 6 cm
Width-across: 36 mm

DIN 18216

Water stop connector 20.0 1.3 581467000
Wasserstopp 20,0

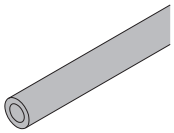


Non-treated
Length: 14 cm

Rock anchor spreader unit 20.0 1.3 581468000
Felsanker-Spreizeinheit 20,0

Galvanised
Length: 11.9 cm
Diameter: 5.7 cm

Fibre concrete tube 27mm 1.25m 2.6 581472000
Faserbetonrohr 27mm 1,25m



Fibre concrete plug D27 21mm 0.03 581473000
Faserbetonstopfen D27 21mm

Grey

Weldable coupler 20.0 0.55 581474000
Anschweißmuffe 20,0

Non-treated
Length: 8 cm
Diameter: 4 cm

Protective cap 15.0/20.0 0.03 581858000
Schutzkappe 15,0/20,0

Yellow
Length: 6 cm
Diameter: 6.7 cm

Multi-trip packaging

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

Galvanised
Height: 113 cm

	[kg]	Article N°
Doka multi-trip transport box 1.20x0.80m Doka-Mehrwegcontainer 1,20x0,80m Galvanised Height: 78 cm	**70.0**	**583011000**
Multi-trip transport box partition 0.80m **Multi-trip transport box partition 1.20m** Mehrwegcontainer Unterteilung Steel parts galvanised Timber parts varnished yellow	**3.7** **5.5**	**583018000** **583017000**
Doka multi-trip transport box 1.20x0.80x0.41m Doka-Mehrwegcontainer 1,20x0,80x0,41m Galvanised	**42.5**	**583009000**
Doka stacking pallet 1.55x0.85m Doka-Stapelpalette 1,55x0,85m Galvanised Height: 77 cm	**41.0**	**586151000**
Doka stacking pallet 1.20x0.80m Doka-Stapelpalette 1,20x0,80m Galvanised Height: 77 cm	**38.0**	**583016000**
Doka accessory box Doka-Kleinteilebox Timber parts varnished yellow Steel parts galvanised Length: 154 cm Width: 83 cm Height: 77 cm	**106.4**	**583010000**

	[kg]	Article N°
Universal castor wheel for transport pallet Universal-Lenkrolle Transportgebinde Galvanised Height: 28.8 cm	**6.0**	**584043000**
Bolt-on castor set B Anklemm-Radsatz B Painted blue	**33.6**	**586168000**

Formwork & Scaffolding.
We make it work.

www.doka.com/large-area-formwork-top-50