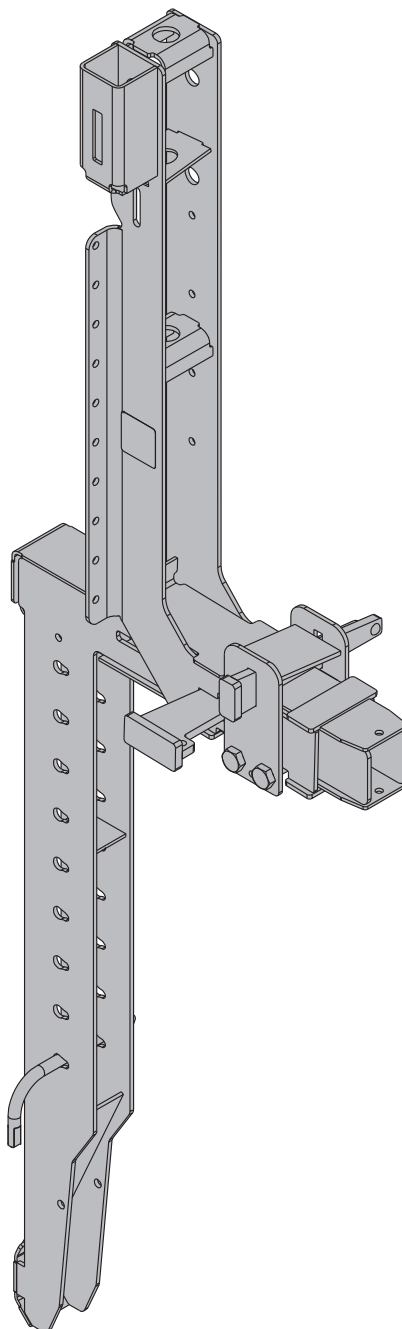


The Formwork Experts.

# Doka floor end-shutter clamp

## User Information

Instructions for assembly and use (Method statement)



# Contents

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

### Regulations; industrial safety

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

## Rules applying during all phases of the assignment

- The customer must ensure that this product is erected and dismantled, reset and generally used for its intended purpose in accordance with the applicable laws, standards and rules, under the direction and supervision of suitably skilled persons. These persons' mental and physical capacity must not in any way be impaired by alcohol, medicines or drugs.
- Doka products are technical working appliances which are intended for industrial / commercial use only, always in accordance with the respective Doka User Information booklets or other technical documentation authored by Doka.
- The stability and load-bearing capacity of all components and units must be ensured during all phases of the construction work!
- Do not step on or apply strain to cantilevers, closures, etc. until suitable measures to ensure their stability have been correctly implemented (e.g. by tie-backs).
- Strict attention to and compliance with the functional instructions, safety instructions and load specifications are required. Non-compliance can cause accidents and severe injury (risk of fatality) and considerable damage to property.
- Sources of fire in the vicinity of the formwork are prohibited. Heaters are permissible only when used correctly and situated at 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.  $F_{perm} = 70 \text{ kN}$ ) are not design values (e.g.  $F_{Rd} = 105 \text{ kN}$ )!**

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

Allowance has been made for the following partial factors:

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

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.

## Services

### Support in every stage of the project

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

#### Project assistance from start to finish

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

#### Efficient planning for a safe project sequence

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

#### Optimise construction workflows with Doka

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

#### Custom formwork and on-site assembly

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

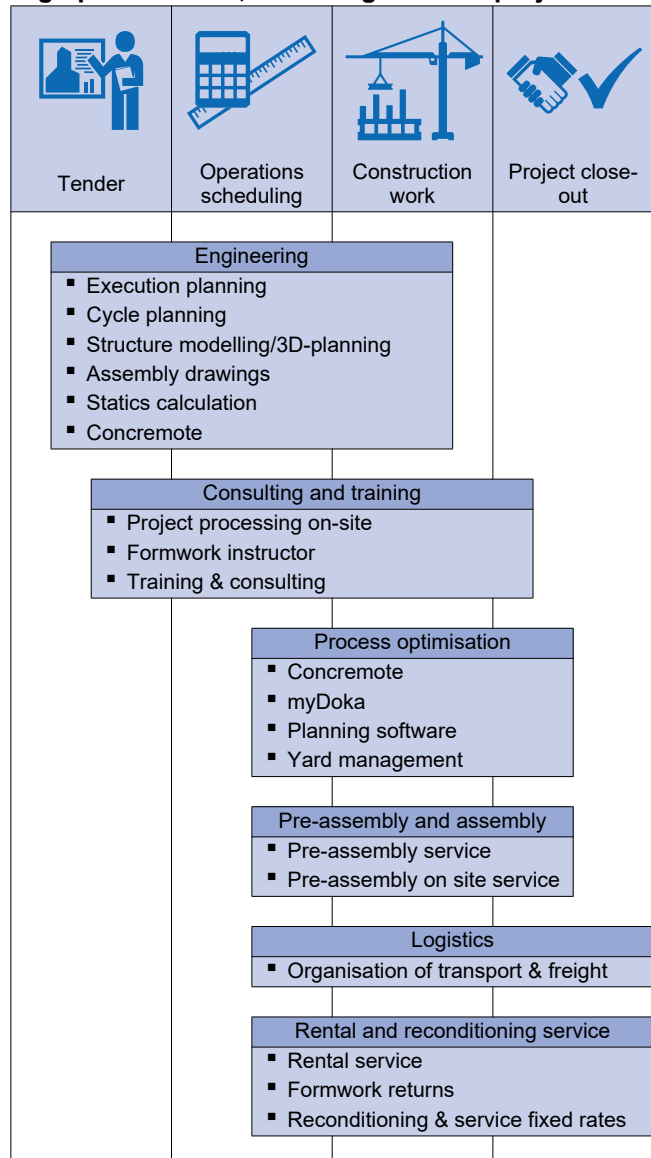
#### Just-in-time availability

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

#### Rental and reconditioning service

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

### High performance, in all stages of the project



#### upbeat construction digital services for higher productivity

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

## Product description

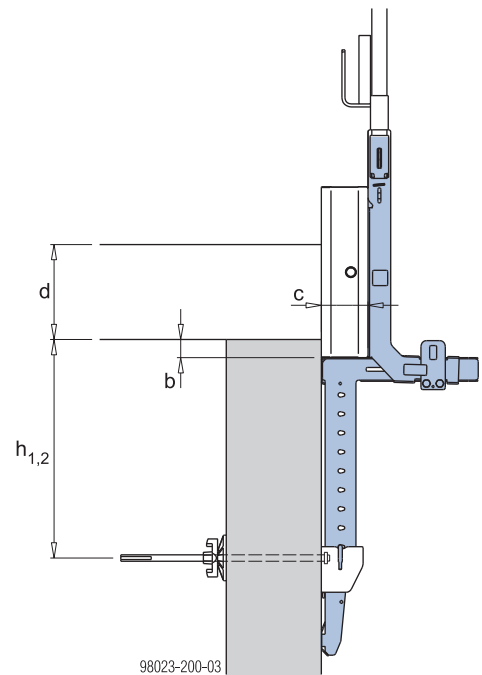
### Doka floor end-shutter clamp

The Doka floor end-shutter clamp is used for fast, safe forming of slab stop-ends.

- For slab thicknesses of up to 60 cm
- 3 different fixing methods
- Various types of stop-end are possible
- Fits all standard Doka handrail posts (also complies with the requirements of DIN EN 13374)
- Can be mounted and dismantled from either above or below when the End-shutter shoe is used
- Low unit weight (can be separated into 2 parts)

## System dimensions

### Doka floor end-shutter clamp



Height of anchor-point from top of wall:

$h_1$  ... 15 - 57.5 cm with End-shutter shoe

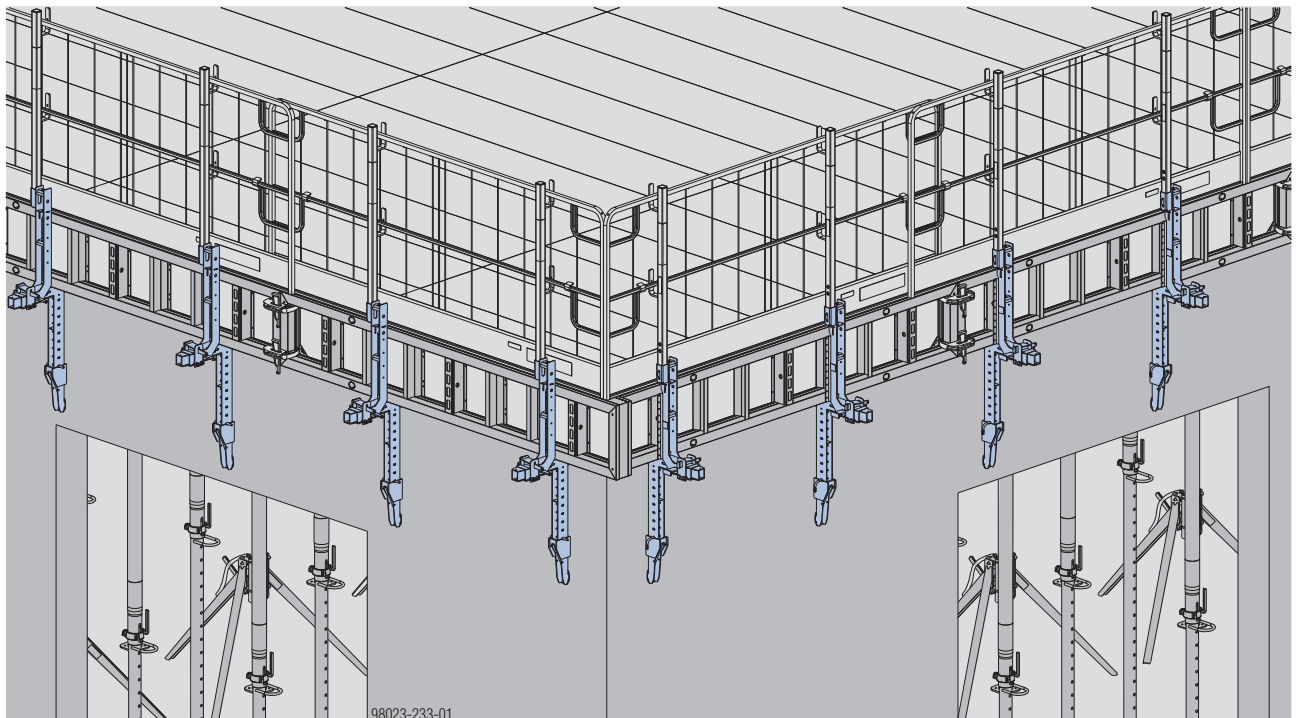
$h_2$  ... 18 - 57.5 cm using a Tie rod 15.0 and Bridge edge beam anchor 15.0

b ... formwork overlap min. 2 cm (as a rule, 5 cm)

c ... stop-end width 2 - 15 cm

d ... slab thickness max. 60 cm

### Practical example

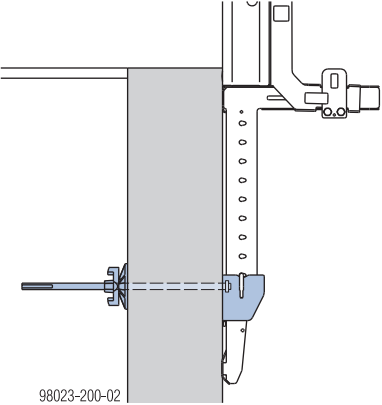
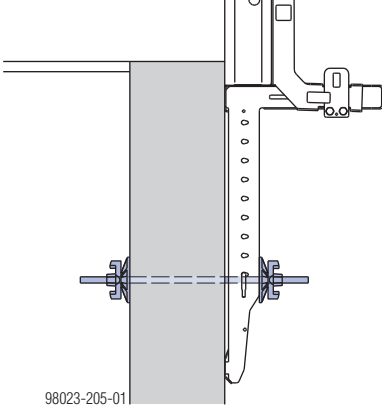
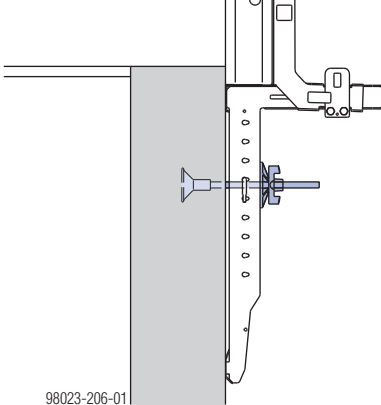


### Note:

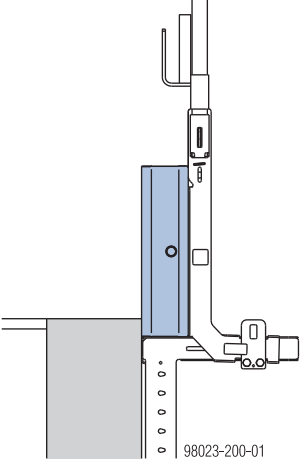
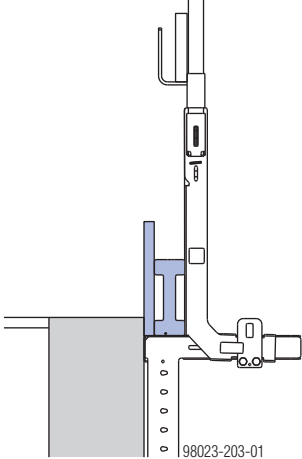
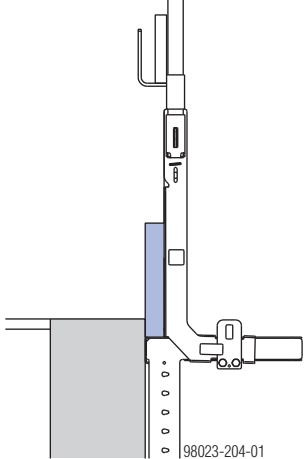
The edge railings must be mounted before the formwork sheets are laid out.

## Applicational range

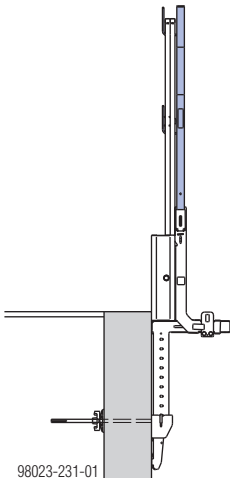
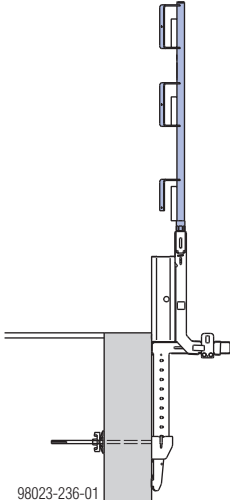
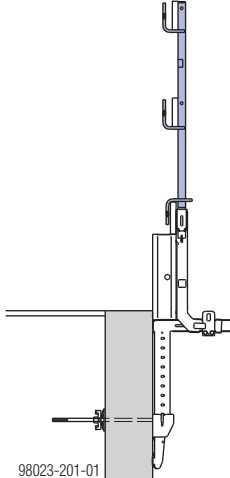
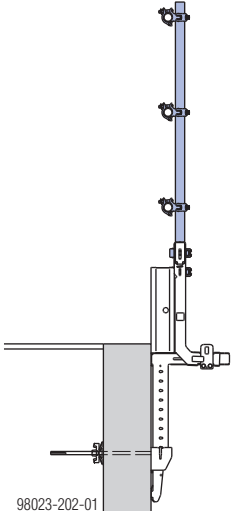
### Attachment methods

with End-shutter shoe and End-shutter tie rod 15.0 15-40cm	with Tie rod 15.0 and Super plate 15.0	with Bridge edge beam anchor 15.0
 98023-200-02	 98023-205-01	 98023-206-01

### Stop-end

with framed formwork panels	with Doka beam H20 and form-ply	with planks
 98023-200-01	 98023-203-01	 98023-204-01

### Ways of safeguarding slab edges

with Handrail post XP 1.20m	with Handrail post 1.10m	with Handrail post 1.00m	with Scaffold tube 48.3mm and screw-on couplers
 98023-231-01	 98023-236-01	 98023-201-01	 98023-202-01



## Instructions for assembly and use (Method statement)

The procedures shown here assume that End-shutter shoes are being used. See "Assembly" for details of other fixing options.



To make it easier to mount, the Doka floor end-shutter clamp can be separated into 2 parts (see the section headed "Dismantling the Doka floor end-shutter clamp").

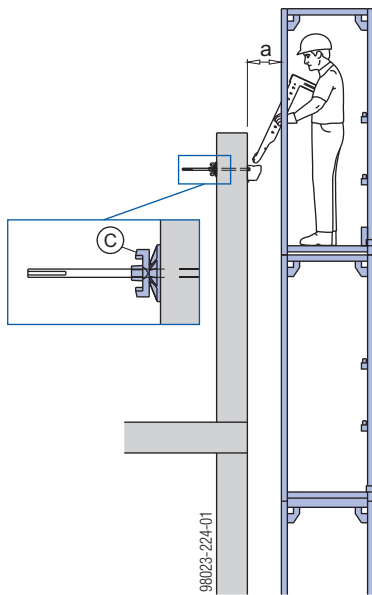
This also makes it possible to mount it from a ladder or when working in confined spaces.

### working from a facade scaffold



Read and observe the Instructions for Assembly and Use provided by the working scaffold manufacturer!

- Erect the facade scaffold.
- Mount the End-shutter tie rod and End-shutter shoe (see the section headed 'Assembly').
- Tighten the End-shutter tie rod on the inside with the Super plate 15.0 (C) .
- Dismantle the Doka floor end-shutter clamp.
- Insert the End-shutter bracket into the End-shutter shoe.



a ... max. 30 cm

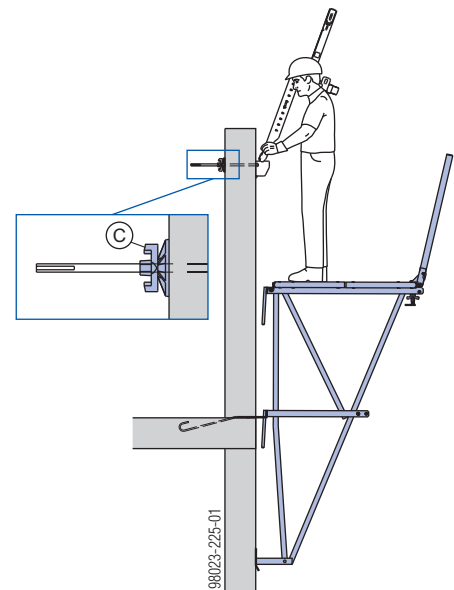
- Mount the End-shutter slide onto the End-shutter bracket.
- Mount the formwork (see the section headed 'Stop-ends').
- Mount the railings (see the section headed 'Safeguarding the slab edges').

### working from a Bracket platform M or Folding platform K



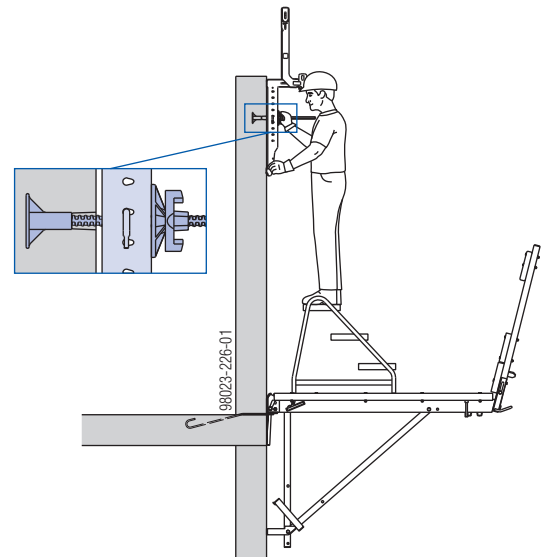
Follow the directions in the relevant User Information booklet!

- Mount the Bracket platform M or Folding platform K.
- Set up a climbing aid if needed.
- Mount the End-shutter tie-rod and End-shutter shoe (see "Assembly").
- **Tighten the End-shutter tie-rod on the inside with the Super-plate 15.0 (C) .**
- Insert the Doka floor end-shutter clamp into the End-shutter shoe.



- Mount the formwork (see the section headed "Stop-ends").
- Mount the railings (see "Safeguarding the slab edges").

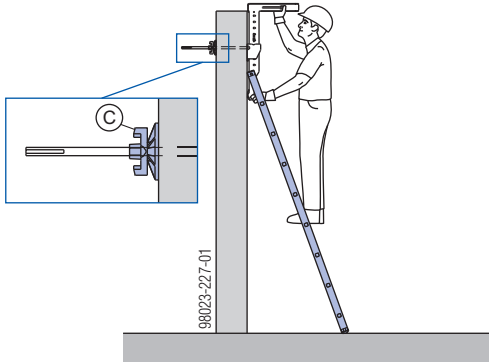
#### Practical example with Folding platform K



Fixing the Doka floor end-shutter clamp with a Bridge edge beam anchor, tie-rod and Super-plate

## working from a ladder

- Put up the ladder so that it stands firmly.
- Mount the End-shutter tie-rod and End-shutter shoe (see "Assembly").
- **Tighten the End-shutter tie-rod on the inside with the Super-plate 15.0 (C) .**
- Dismantle the Doka floor end-shutter clamp
- Insert the End-shutter bracket into the End-shutter shoe.



- Mount the End-shutter slide onto the End-shutter bracket.
- Mount the formwork (see the section headed "Stop-ends").
- Mount the railings (see "Safeguarding the slab edges").

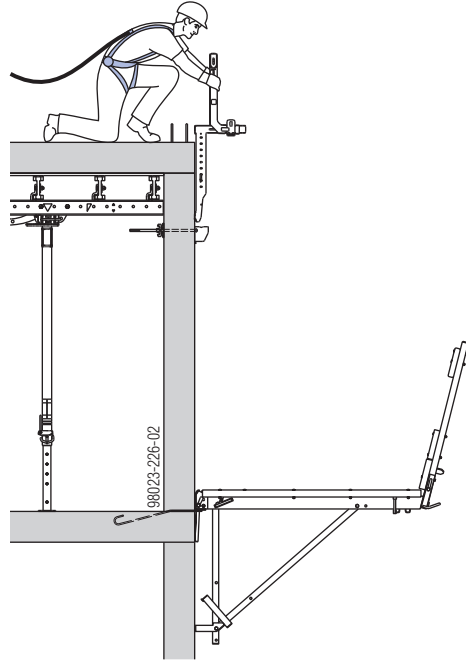
## Dismantling

Dismantling is the reverse of the assembly procedure.



### NOTICE

To safely dismantle the Doka floor end-shutter clamp 'from above', use a personal fall-arrest system (e.g. personal fall-arrest set)!



# Assembly

## Variant 1

### '1-man-assembly' using End-shutter shoe and End-shutter tie rod 15.0 15-40cm

- Prepare tie-holes, spaced the chosen distance apart (see the section headed 'Structural design').



On walls formed by framed formwork panels, the existing tie-holes can be used.

- Working from the outside, push the End-shutter tie rod 15.0 15-40cm through the End-shutter shoe and the tie-hole.

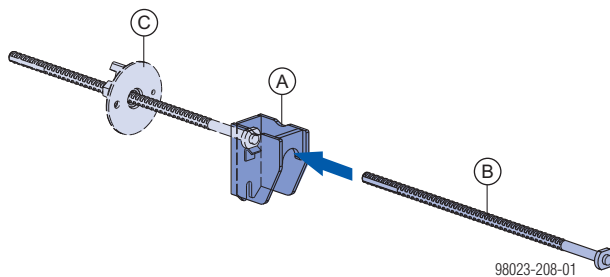


#### NOTICE

- Tighten the End-shutter shoe firmly!

This ensures that the Doka floor end-shutter clamp is safely positioned.

- Secure from the inside by turning the Super plate 15.0.



A End-shutter shoe

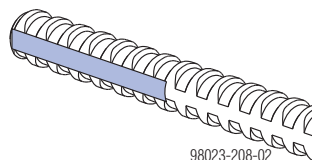
B End-shutter tie rod 15.0 15-40cm

C Super plate 15.0

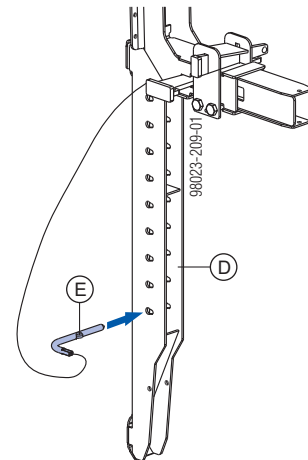


Make sure that the End-shutter shoes are correctly positioned in the vertical (you can see this from the inside by checking that the flattened 'sides' of the End-shutter tie rod are in the vertical)!

If necessary, re-tighten the End-shutter tie rod 15.0 15-40cm with a Tie-rod wrench 15.0/20.0.



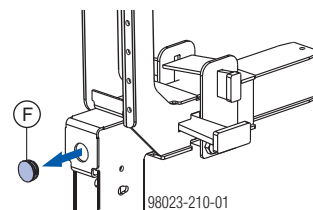
- Determine the required height position on the Doka floor end-shutter clamp itself, or find this out from the project plan, and insert a fastening bolt into the appropriate hole (see the section headed 'System dimensions').



D Doka floor end-shutter clamp

E Fastening bolt

- If a Universal plug R20/25 or Plug for closure plate R25 has been plugged into the End-shutter clamp, remove this plug. The plug is only needed in Methods 2 and 3.



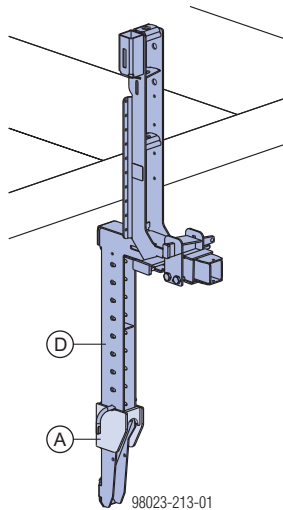
F Universal plug R20/25 or Plug for closure plate R25



The Doka floor end-shutter clamp is designed so that when it is used in Method 1 (with an End-shutter shoe) the stop-end will stand exactly in the vertical without needing any Universal plug R20/25 or Plug for closure plate R25.

When the End-shutter clamp is used without these distancer plugs in Method 2 or 3 (without an End-shutter shoe), the stop-end will be inclined slightly forward. If this is not desired, then one of these two types of distancer plug must be fitted.

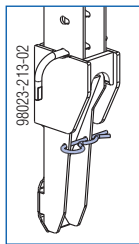
- Insert the Doka floor end-shutter clamp into the End-shutter shoe.



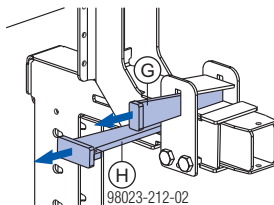
**A** End-shutter shoe

**D** Doka floor end-shutter clamp

**Close-up: extra hole for optional anti-liftout guard, e.g. Spring cotter 5mm**



- Loosen the Impact wedge 170mm and Slide wedge 235mm.

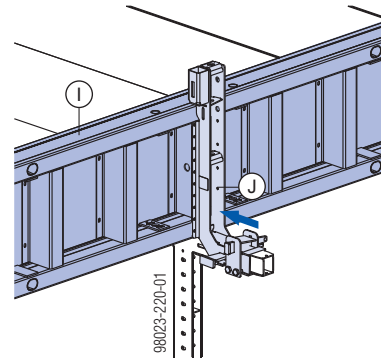


**G** Impact wedge 170mm (galvanised yellow)

**H** Slide wedge 235mm (galvanised blue)

- Install the stop-end, for example with framed form-work panels (for other types of stop-end see the section headed 'Stop-ends').

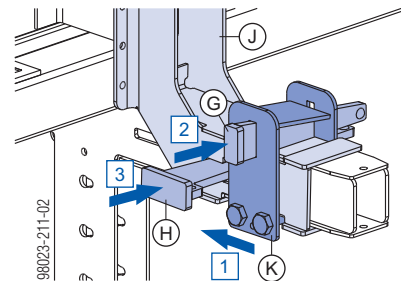
- Push the End-shutter slide up against the stop-end.



**I** Stop-end

**J** End-shutter slide

- Push the wedge unit towards the stop-end.
- Tighten the Impact wedge 170mm (until the hammer rebounds from the wedge).
- Press the End-shutter slide against the stop-end with the Slide wedge 235mm.



**G** Impact wedge 170mm (galvanised yellow)

**H** Slide wedge 235mm (galvanised blue)

**J** End-shutter slide

**K** Wedge unit

- Mount the desired railings (see the section headed 'Safeguarding the slab edges').

## Variant 2

### Mounting using Tie rods 15.0 and Super plates 15.0:



#### WARNING

Sensitive rod steel!

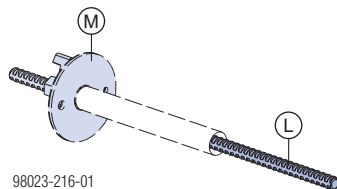
- Never weld or heat tie rods.
- Tie rods that are damaged or have been weakened by corrosion or wear must be withdrawn from use.

- Prepare tie-holes, spaced the chosen distance apart (see the section headed 'Structural design').



On walls formed by framed formwork panels, the existing tie-holes can be used.

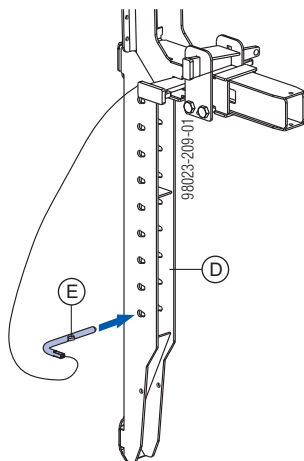
- One person pushes the Tie rod 15.0 through the tie-hole from the inside, with a Super plate 15.0 already screwed onto it.



**L** Tie rod 15.0

**M** Super plate 15.0

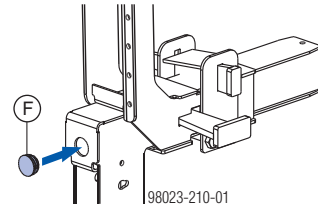
- Determine the required height position on the Doka floor end-shutter clamp itself, or find this out from the project plan, and insert a fastening bolt into the appropriate hole (see the section headed 'System dimensions').



**D** Doka floor end-shutter clamp

**E** Fastening bolt

- If not already fitted, plug a Universal plug R20/25 or Plug for closure plate R25 into the hole in the Doka floor end-shutter clamp.



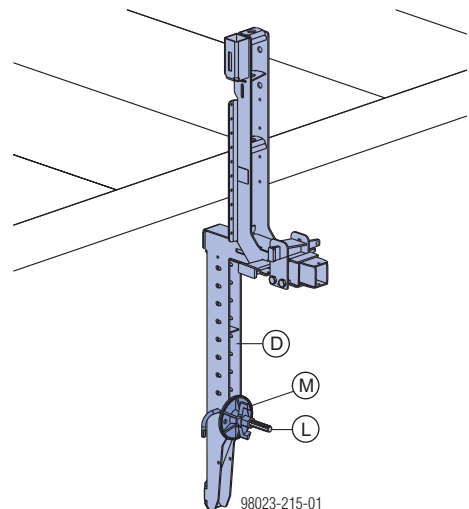
**F** Universal plug R20/25 or Plug for closure plate R25



The Doka floor end-shutter clamp is designed so that when it is used in Method 1 (with an End-shutter shoe) the stop-end will stand exactly in the vertical without needing any Universal plug R20/25 or Plug for closure plate R25.

When the End-shutter clamp is used without these distancer plugs in Method 2 or 3 (without an End-shutter shoe), the stop-end will be inclined slightly forward. If this is not desired, then one of these two types of distancer plug must be fitted.

- Working from the outside, push the Doka floor end-shutter clamp onto the tie rod (so that the fastening bolts rest on the top of the tie rod), and tighten it with a Super plate 15.0.

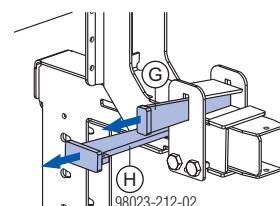


**D** Doka floor end-shutter clamp

**L** Tie rod 15.0

**M** Super plate 15.0

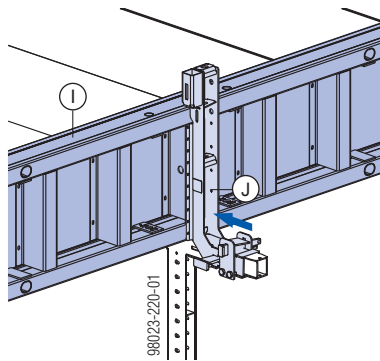
- Loosen the Impact wedge 170mm and Slide wedge 235mm.



**G** Impact wedge 170mm (galvanised yellow)

**H** Slide wedge 235mm (galvanised blue)

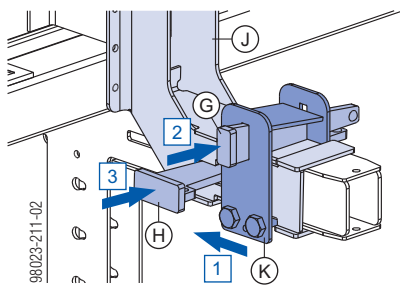
- Install the stop-end, for example with framed form-work panels (for other types of stop-end see the section headed 'Stop-ends').
- Push the End-shutter slide up against the stop-end.



**I** Stop-end

**J** End-shutter slide

- Push the wedge unit towards the stop-end.
- Tighten the Impact wedge 170mm (until the hammer rebounds from the wedge).
- Press the End-shutter slide against the stop-end with the Slide wedge 235mm.



**G** Impact wedge 170mm (galvanised yellow)

**H** Slide wedge 235mm (galvanised blue)

**J** End-shutter slide

**K** Wedge unit

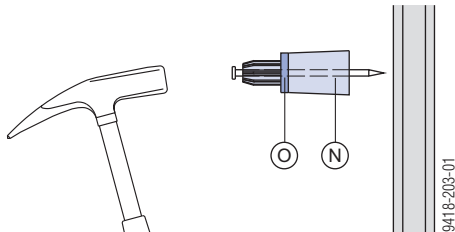
- Mount the desired railings (see the section headed 'Safeguarding the slab edges').

## Variant 3

### Mounting using Bridge edge beam anchor 15.0

#### Fitting the Bridge edge beam anchor:

- ▶ The required spacing of the anchorage points in the concrete must be prepared before the walls are poured (see the section headed 'Structural design').
- ▶ Nail a nailing cone to the form-ply (position as shown in shop drawing / assembly plan).



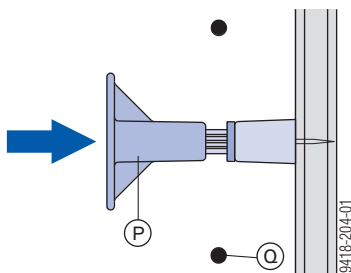
**N** Nailing cone 15.0

**O** Sealing ring



Make sure that the sealing ring is fitted correctly!

- ▶ Push the Bridge edge beam anchor onto the nailing cone.



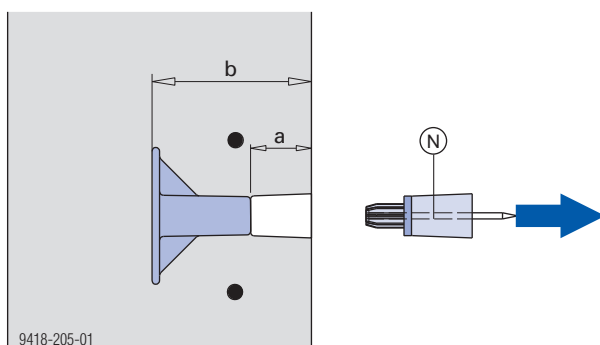
**P** Bridge edge beam anchor 15.0

**Q** Reinforcement

- ▶ Tie the Bridge edge beam anchor tightly to the reinforcements with binding wire. This prevents it from working loose during pouring and vibration.

#### After the formwork has been struck:

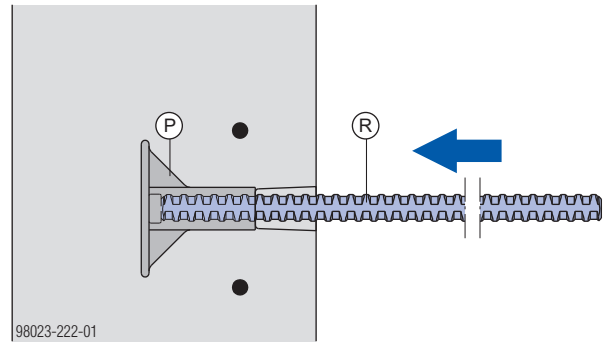
- ▶ Remove the nailing cone from the anchoring point.



a ... concrete cover 4.0 cm  
b ... placement depth 11.5 cm

**N** Nailing cone 15.0

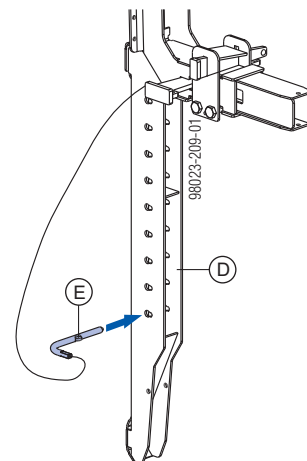
- ▶ Twist a Tie rod 15.0 0.50m into the Bridge edge beam anchor 15.0.



**P** Bridge edge beam anchor 15.0

**R** Tie rod 15.0 0.50m

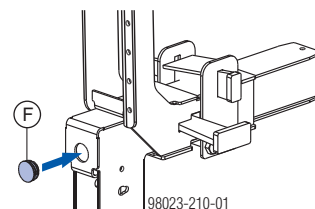
- ▶ Determine the required height position on the Doka floor end-shutter clamp itself, or find this out from the project plan, and insert a fastening bolt into the appropriate hole (see the section headed 'System dimensions').



**D** Doka floor end-shutter clamp

**E** Fastening bolt

- ▶ If not already fitted, plug a Universal plug R20/25 or Plug for closure plate R25 into the hole in the Doka floor end-shutter clamp.



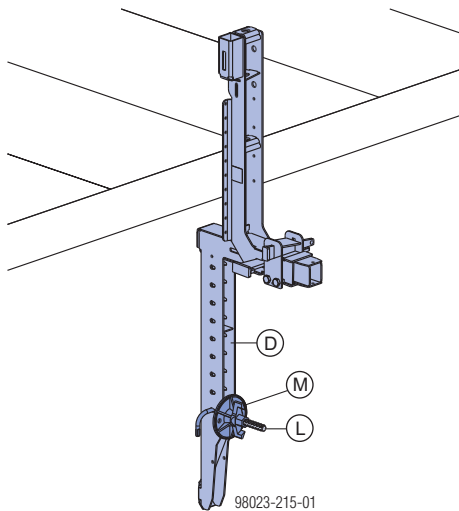
**F** Universal plug R20/25 or Plug for closure plate R25



The Doka floor end-shutter clamp is designed so that when it is used in Method 1 (with an End-shutter shoe) the stop-end will stand exactly in the vertical without needing any Universal plug R20/25 or Plug for closure plate R25.

When the End-shutter clamp is used without these distancer plugs in Method 2 or 3 (without an End-shutter shoe), the stop-end will be inclined slightly forward. If this is not desired, then one of these two types of distancer plug must be fitted.

- ▶ Working from the outside, push the Doka floor end-shutter clamp onto the tie rod (so that the fastening bolts rest on the top of the tie rod), and tighten it with a Super plate 15.0.

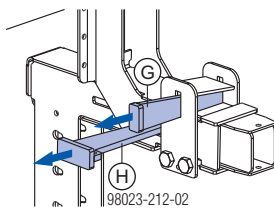


**D** Doka floor end-shutter clamp

**L** Tie rod 15.0

**M** Super plate 15.0

- ▶ Loosen the Impact wedge 170mm and Slide wedge 235mm.

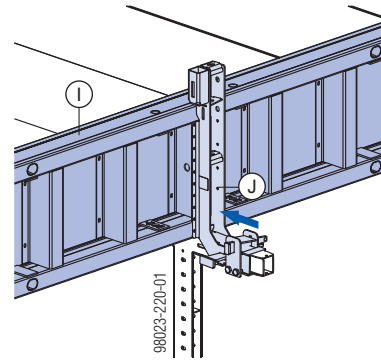


**G** Impact wedge 170mm (galvanised yellow)

**H** Slide wedge 235mm (galvanised blue)

- ▶ Install the stop-end, for example with framed form-work panels (for other types of stop-end see the section headed 'Stop-ends').

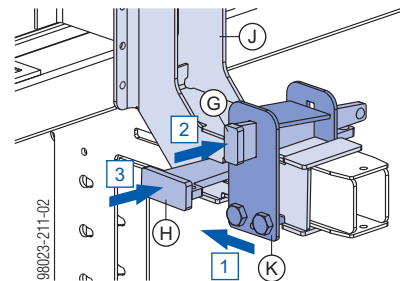
- ▶ Push the End-shutter slide up against the stop-end.



**I** Stop-end

**J** End-shutter slide

- ▶ Push the wedge unit towards the stop-end.
- ▶ Tighten the Impact wedge 170mm (until the hammer rebounds from the wedge).
- ▶ Press the End-shutter slide against the stop-end with the Slide wedge 235mm.



**G** Impact wedge 170mm (galvanised yellow)

**H** Slide wedge 235mm (galvanised blue)

**J** End-shutter slide

**K** Wedge unit

- ▶ Mount the desired railings (see the section headed 'Safeguarding the slab edges').

## Dismantling

Dismantling is the reverse of the assembly procedure.



### NOTICE

To safely dismantle the Doka floor end-shutter clamp 'from above', use a personal fall-arrest system (e.g. personal fall-arrest set)!



## Using on brick walls

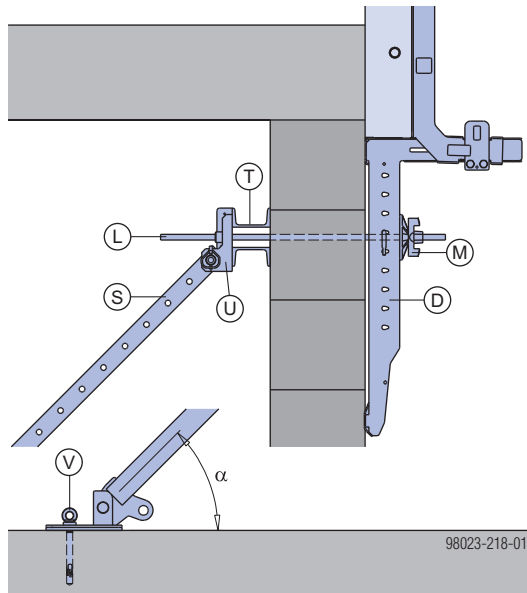
### Note:

Only fixing-method 2 is possible (Tie-rod and Super-plate 15.0).



### WARNING

➤ Extra tie-backs needed on the inside, e.g. with plumbing struts.



α ... max. 45°

- D** Doka floor end-shutter clamp
- L** Tie-rod 15.0
- M** Super-plate 15.0
- S** Plumbing strut 260, 340 or 540 IB
- T** Multi-purpose waling WS10 Top50 (for distributing the loads)
- U** Anchor bracket M
- V** Doka Express anchor 16x125mm

## Installation



➤ Only anchor in masonry that has sufficient load-bearing capacity.

Bulk density  $\geq 0.8 \text{ kg/dm}^3$

Characteristic compressive strength:  
 $\geq 10 \text{ N/mm}^2$  (100 kg/cm<sup>2</sup>)

Wall thickness at least 24 cm



### NOTICE

Special care is needed when preparing suspension points in masonry. Every suspension point must be inspected by a skilled person before being loaded.

## Drilled holes in the footplates

Plumbing strut 340 IB, 540 IB	Plumbing strut 260 IB

a ... diam. 26 mm

b ... diam. 18 mm

## Anchoring the footplate

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

Characteristic cube compressive strength of the concrete ( $f_{ck, \text{cube}}$ ):  
min. 15 N/mm<sup>2</sup> (C12/15 grade concrete)



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

## Required safe working load of alternative anchors for footplates:

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

Follow the manufacturers' applicable fitting instructions.

## Dismantling

➤ Remove the Doka floor end-shutter clamp.



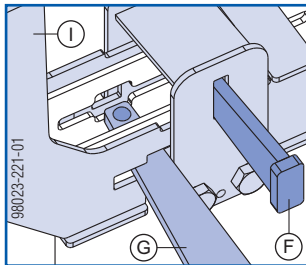
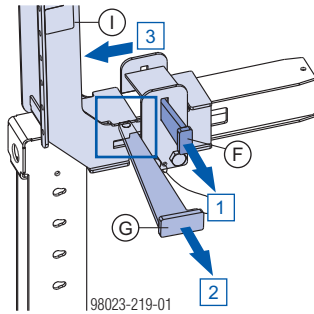
Before proceeding with any further work-steps, make absolutely sure that the Doka floor end-shutter clamps have been removed from the suspension points.

➤ Unscrew the Express anchor or dowel, and remove the suspension point.

## Dismantling the Doka floor end-shutter clamp

To make it easier to mount, the Doka floor end-shutter clamp can be separated into 2 parts.

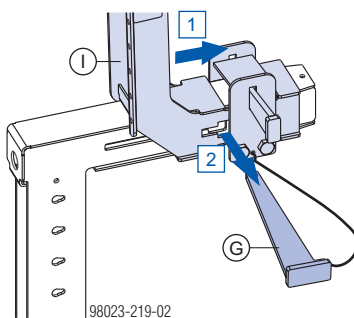
- Loosen the Impact wedge 170mm and Slide wedge 235mm.
- Move the End-shutter slide inwards until the Slide wedge 235mm can be pulled into the profiled tube (see close-up).



Close-up showing the End-shutter bracket in the "open" position

- I End-shutter slide
- F Impact wedge 170mm
- G Slide wedge 235mm

- Move the End-shutter slide outwards until the Slide wedge 235mm can be pulled out completely.



- I End-shutter slide
- G Slide wedge 235mm

- Pull the End-shutter slide off the End-shutter bracket.

Animation: <https://player.vimeo.com/video/284892759>

### Assembling the Doka floor end-shutter clamp

- To assemble the Doka floor end-shutter clamp, carry out the above steps in reverse order.

## Stop-ends



### NOTICE

Make sure that the stop-end extends at least 15 cm above the height of the finished floor-slab! If it does not, an extra toeboard must be mounted!

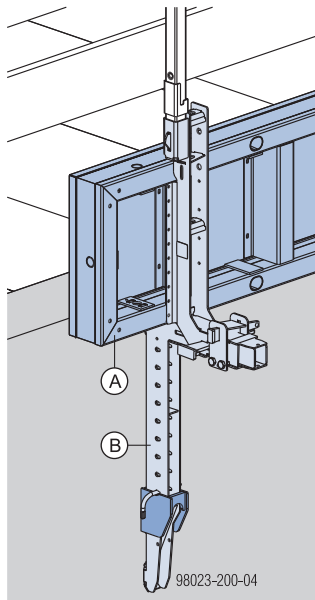


If a foam rubber seal (e.g. Sealing tape KS) is inserted on the underside of the formwork, this prevents cement slurry seeping out.

## with framed formwork panels

Possible framed formwork panels (max. width see the section headed 'Structural design'):

- Framax Xlife panels
- Frami Xlife panels
- DokaXlight panels
- Alu-Framax Xlife panels

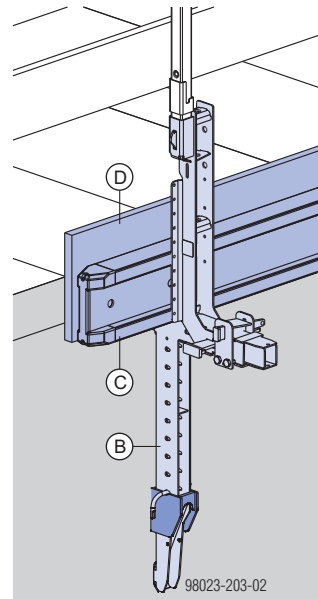


- A Framed formwork panel
- B Doka floor end-shutter clamp

### Note:

When e.g. 60 cm wide framed formwork panels are used with 2 cm of formwork overlap, slab thicknesses of up to 58 cm are possible.

## with Doka beam H20 and form-ply

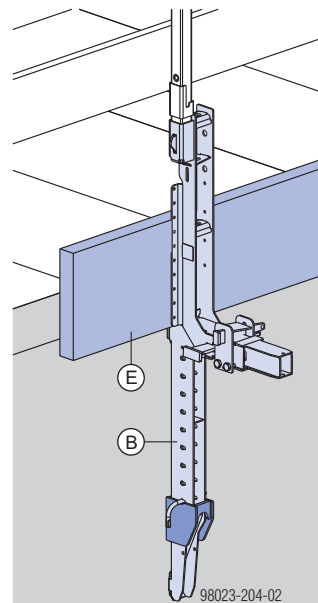


- B Doka floor end-shutter clamp
- C Doka beam H20
- D Form-ply

### Note:

As a basic rule, it is forbidden to use formwork beams "horizontally" (i.e. with the load-direction perpendicular to the web). However, the application shown here – with the Doka floor end-shutter clamp – is allowed.

## with planks



- B Doka floor end-shutter clamp
- E Plank

## Safeguarding the slab-edges

### Note:

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

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

### Handrail post XP 1.20m

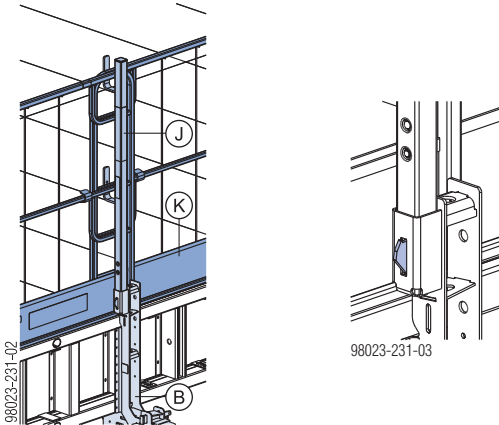


Follow the directions in the 'Edge protection system XP' User Information booklet.

- Push the Handrail post XP 1.20m into the handrail-post holder of the Doka floor end-shutter clamp until it locks ('Easy-Click' function).
- Hang the Protective grating XP into place in all 4 Handrail-post plates.



The Handrail post XP 1.20m also allows guardrail boards and scaffold tubes to be used as the side railings.



**B** Doka floor end-shutter clamp

**J** Handrail post XP 1.20m

**K** Protective grating XP 2.70x1.20m

### Note:

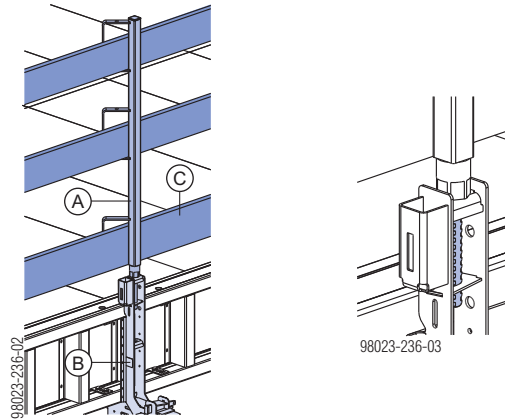
The Protective grating XP can only be used on 45 cm wide framed formwork panels, and only for as long as the formwork has been stripped out, other safety barriers must be put up.

### Handrail post 1.10m



Follow the directions in the 'Handrail post 1.10m' User Information booklet.

- Twist a Handrail post 1.10m into the Doka floor end-shutter clamp until it is fully engaged.
- Insert guardrail boards and secure them with nails.



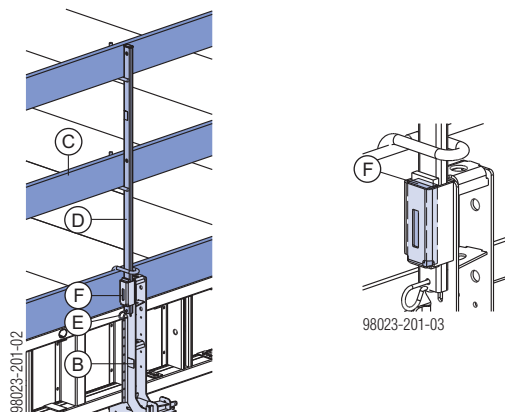
**A** Handrail post 1.10m

**B** Doka floor end-shutter clamp

**C** Guardrail boards

### Handrail post 1.00m

- Insert a Handrail post 1.00m into the handrail-post holder on the Doka floor end-shutter clamp and secure it with a Spring cotter 5mm (included with product).
- Add a wooden spacer (11x3.5x2cm – provided at site).
- Insert guardrail boards and secure them with nails.



**B** Doka floor end-shutter clamp

**C** Guardrail boards

**D** Handrail post 1.00m

**E** Spring cotter 5mm

**F** Wooden spacer

## Scaffold tube 48.3mm

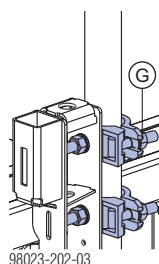
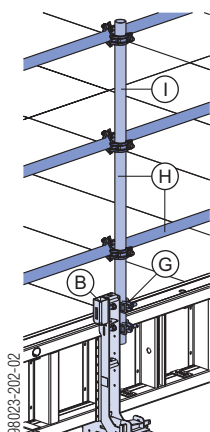
Tools for mounting the couplers and scaffold tubes:  
Fork wrench 22 mm



### NOTICE

There must be an at least 15 cm high toeboard in place around the edge of the finished floor slab.

- Fasten 2 Screw-on couplers 48mm 50 onto the Doka floor end-shutter clamp.
- Firmly clamp the Scaffold tube 48.3mm 1.50m to the screw-on couplers.
- Fasten horizontal scaffold tubes onto the vertical scaffold tube using Normal couplers 48mm.



**B** Doka floor end-shutter clamp

**G** Screw-on coupler 48mm 50

**H** Scaffold tube 48.3mm

**I** Normal coupler 48mm

## Additional areas of use

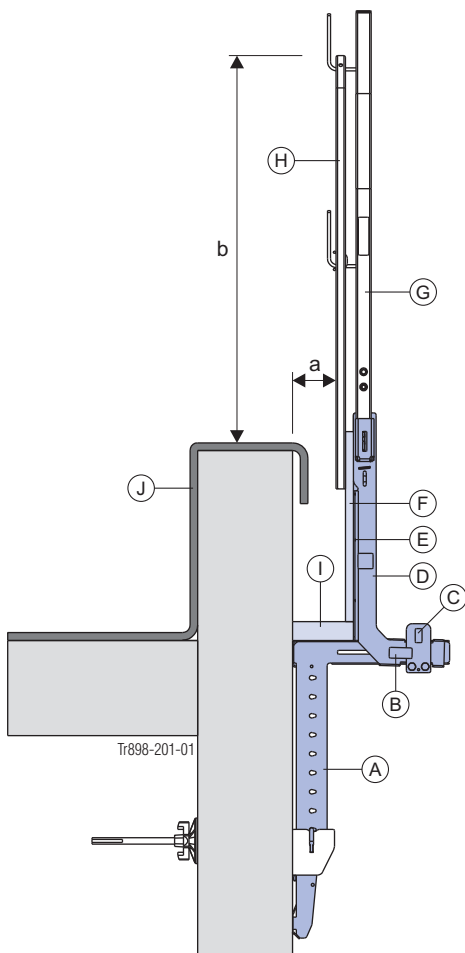
### Fall protection behind flat-roof parapets



#### NOTICE

In this application, the Doka floor end-shutter clamp must not be used as a working platform or as a stop-end for concrete loads.

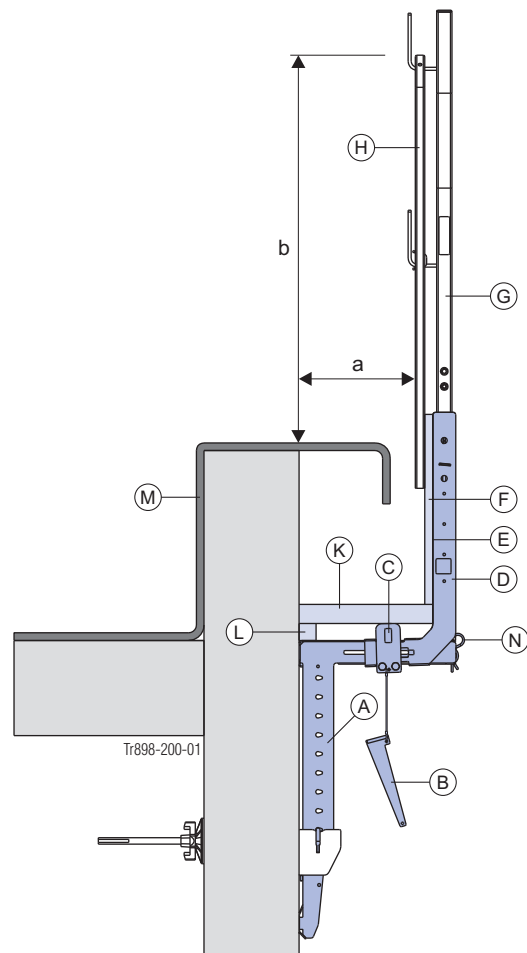
#### Standard utilisation



a ... max. 11 cm  
b ... min. 100 cm

- A** Doka floor end-shutter clamp
- B** Wedge 235mm
- C** Wedge 170mm
- D** End-shutter slide
- E** Formwork sheet fixed on by nails
- F** Toeboard (e.g. 3-SO formwork sheet, height 50 cm, site-provided)
- G** Handrail post XP 1.20m
- H** Protective grating XP 2.70x1.20m
- I** Deck-board, max. 50x160 mm (site-provided)
- J** Flashing

#### End-shutter slide turned 180°

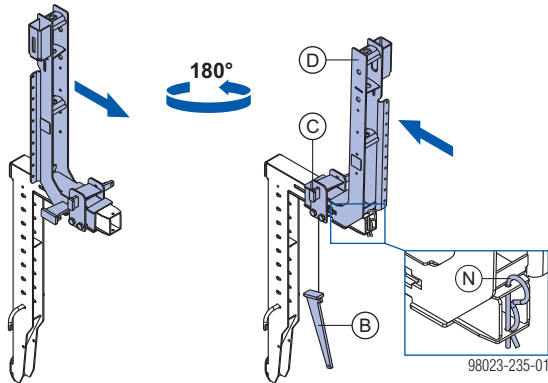


a ... max. 30 cm  
b ... min. 100 cm

- A** Doka floor end-shutter clamp
- B** Wedge 235mm
- C** Wedge 170mm
- D** End-shutter slide
- E** Formwork sheet fixed on by nails
- F** Toeboard (e.g. 3-SO formwork sheet, height 50 cm, site-provided)
- G** Handrail post XP 1.20m
- H** Protective grating XP 2.70x1.20m
- K** Deck-board, max. 50x350 mm (site-provided)
- L** Squared timber, 40x40 mm (site-provided)
- M** Flashing leaving gap for thermal insulation
- N** Spring cotter 5 mm (not included in scope of supply)

## Modifying the Doka floor end-shutter clamp

- ▶ Dismount the End-shutter slide (see the section headed 'Dismantling the Doka floor end-shutter clamp').
- ▶ Turn the End shutter slide 180° and push it back onto the Doka floor end-shutter clamp.
- ▶ Fix the End-shutter slide with a Wedge 170mm and secure this with a Spring cotter 5mm to prevent accidental removal. Leave the Wedge 235mm hanging loosely.



**B** Wedge 235mm

**C** Wedge 170mm

**D** End-shutter slide

**N** Spring cotter 5 mm (not included in scope of supply)

Animation: <https://player.vimeo.com/video/284892974>



At the end of the project, restore the Doka floor end-shutter clamp to its standard configuration.

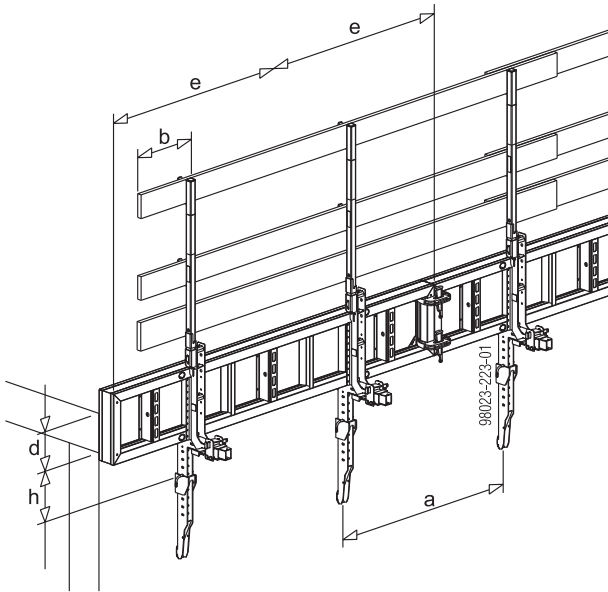
## Structural design

Edge-protection component	Permitted influence width [cm]
Guardrail boards 20 cm <sup>1)</sup>	120
Guardrail boards 15 cm <sup>1)</sup>	170
Protective grating XP 2.70x1.20m	250
Scaffold tubes	300

<sup>1)</sup> Diagonal bracing tube needed between the toeboard and the waist-level guard rail, as a stiffening reinforcement.

# Structural design

## with guard rails



### Permitted cantilever (b) of edge-protection components

Edge-protection component	Permitted cantilever
Guardrail board 2.5 x 12.5 cm	0.3 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
Guardrail board 3 x 20 cm	1.0 m
Guardrail board 4 x 20 cm	1.6 m
Guardrail board 5 x 20 cm	1.9 m
Scaffold tube 48.3mm	1.3 m
Protective grating XP	0.6 m

### Note:

For slab thickness 55 cm, stop-ends with a DokaXlife panel 0.60m are possible only with 2nd-generation Floor end-shutter clamps.

### Differentiating feature

Generation 1	Generation 2

Slab thickness 'd' [cm]	Permitted influence width 'e' [cm]					Tensile force occurring [kN] <sup>5)</sup>									Permitted spans 'a' of the stop-ends <sup>[cm]</sup> 1)					
	Height of anchor-point 'h' from top of wall [cm]										Framax Xlife panel 0.60m	Frami Xlife panel 0.60m	DokaXlife panel 0.60m	Alu-Framax Xlife panel 0.60m	Doka beam H20 + form-ply	Planks, 5x20 cm				
	15 - 35	40 <sup>2)</sup>	45 <sup>2)</sup>	50 <sup>2)</sup>	57.5 <sup>2)</sup>	15	20	25	30	35							40	45	50	57.5
60	80	70	60	60	50	6.6	7.2	7.9	8.7	9.6	9.7	9.9	11.6	13.6	—	—	—	—	110 <sup>4)</sup>	90
55	100	90	80	70	60	6.8	7.4	8.1	8.9	9.9	10.2	10.7	11.3	13.5	200	145	135 <sup>6)</sup>	165	110 <sup>4)</sup>	100
50	120	110	100	90	80	6.7	7.2	7.9	8.7	9.7	10.2	10.8	11.6	14.3	200	150	140	170	110 <sup>4)</sup>	100
45	150 <sup>3)</sup>	140 <sup>3)</sup>	130 <sup>3)</sup>	120	100	6.6	7.2	7.9	8.7	9.7	10.3	11.1	12.2	14.3	210	160	145	175	120 <sup>4)</sup>	100
40	200 <sup>3)</sup>	190 <sup>3)</sup>	170 <sup>3)</sup>	150 <sup>3)</sup>	140 <sup>3)</sup>	6.8	7.4	8.1	8.9	9.9	10.7	11.2	11.9	15.2	220	170	150	180	120 <sup>4)</sup>	110
35	230 <sup>3)</sup>	230 <sup>3)</sup>	230 <sup>3)</sup>	210 <sup>3)</sup>	180 <sup>3)</sup>	6.7	7.3	7.9	8.7	9.7	10.6	11.4	12.4	14.8	230	170	155	190	130 <sup>4)</sup>	110
30	250 <sup>3)</sup>	250 <sup>3)</sup>	250 <sup>3)</sup>	250 <sup>3)</sup>	250 <sup>3)</sup>	6.2	6.7	7.4	8.1	9.1	10.2	11.4	12.7	15.3	250	180	160	200	130	110
28	260 <sup>3)</sup>	260 <sup>3)</sup>	260 <sup>3)</sup>	260 <sup>3)</sup>	260 <sup>3)</sup>	5.5	6.0	6.5	7.2	8.0	9.1	10.4	12.2	15.3	260	190	165	210	140	120
26	270 <sup>3)</sup>	270 <sup>3)</sup>	270 <sup>3)</sup>	270 <sup>3)</sup>	270 <sup>3)</sup>	4.9	5.3	5.8	6.4	7.1	8.0	9.2	10.8	14.6	270	190	170	220	140	120
24	280 <sup>3)</sup>	280 <sup>3)</sup>	280 <sup>3)</sup>	280 <sup>3)</sup>	280 <sup>3)</sup>	4.3	4.6	5.1	5.6	6.2	7.1	8.1	9.5	12.8	280	200	180	230	150	130
22	290 <sup>3)</sup>	290 <sup>3)</sup>	290 <sup>3)</sup>	290 <sup>3)</sup>	290 <sup>3)</sup>	3.7	4.1	4.4	4.9	5.5	6.2	7.1	8.3	11.2	290	210	190	240	150	130
20	300 <sup>3)</sup>	300 <sup>3)</sup>	300 <sup>3)</sup>	300 <sup>3)</sup>	300 <sup>3)</sup>	3.3	3.5	3.9	4.3	4.8	5.4	6.2	7.2	9.8	300	220	200	250	160	140

<sup>1)</sup> Sealing tape KS required (deflection of 2 mm has been allowed for)

<sup>2)</sup> When used without Sealing tape KS, the influences must be reduced by 20% (deflection 1 mm)

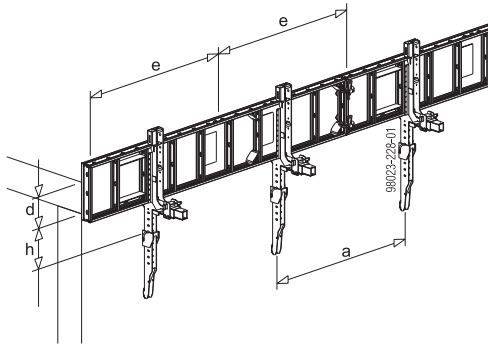
<sup>3)</sup> Max. influence when erected with guardrail boards 20 cm: 120 cm; with guardrail boards 15 cm: 170 cm; Protective grating XP 2.70x1.20m: 250 cm

<sup>4)</sup> 2 Doka beams H20 required (see Practical example)

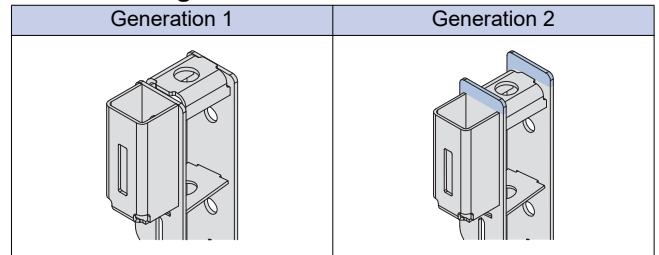
<sup>5)</sup> For dimensioning when using alternative (i.e. non-Doka) anchorages

<sup>6)</sup> Possible only with 2nd-generation Floor end-shutter clamps (see the 'Distinguishing feature' graphic)



**without guard rails****Note:**

For slab thickness 55 cm, stop-ends with a DokaXlife panel 0.60m are possible only with 2nd-generation Floor end-shutter clamps.

**Differentiating feature**

Slab thickness 'd' [cm]	Permitted influence width 'e' [cm]					Tensile force occurring [kN] <sup>5)</sup>									Permitted spans 'a' of the stop-ends <sup>[cm]</sup> 1)					
	Height of anchor-point 'h' from top of wall [cm]										Framax Xlife panel 0.60m	Frami Xlife panel 0.60m	DokaXlight panel 0.60m	Alu-Framax Xlife panel 0.60m	Doka beam H20 + form-ply	Planks, 5x20 cm				
	15 - 35	40 <sup>2)</sup>	45 <sup>2)</sup>	50 <sup>2)</sup>	57.5 <sup>2)</sup>	15	20	25	30	35							40	45	50	57.5
60	90	90	90	80	70	6.2	6.7	7.4	8.1	9.1	10.2	11.7	12.2	14.5	—	—	—	—	110 <sup>4)</sup>	90
55	110	110	110	100	90	6.3	6.8	7.4	8.2	9.2	10.3	11.9	12.6	15.4	200	145	135 <sup>6)</sup>	165	110 <sup>4)</sup>	100
50	130	130	130	120	110	6.0	6.5	7.1	7.9	8.8	9.9	11.4	12.3	15.2	200	150	140	170	110 <sup>4)</sup>	100
45	160	160	160	160	140	5.9	6.4	7.0	7.7	8.6	9.7	11.1	13.1	15.4	210	160	145	175	120 <sup>4)</sup>	100
40	210	210	210	200	180	6.0	6.5	7.1	7.9	8.8	9.9	11.4	12.7	15.4	220	170	150	180	120 <sup>4)</sup>	110
35	230	230	230	230	230	6.0	6.5	7.1	7.9	8.8	9.9	11.4	12.9	15.4	230	170	155	190	130 <sup>4)</sup>	110
30	250	250	250	250	250	5.1	5.6	6.1	6.7	7.5	8.4	9.7	11.3	15.3	250	180	160	200	130	110
28	260	260	260	260	260	4.4	4.8	5.2	5.8	6.4	7.3	8.4	9.8	13.2	260	190	165	210	140	120
26	270	270	270	270	270	3.8	4.1	4.5	4.9	5.5	6.2	7.1	8.4	11.3	270	190	170	220	140	120
24	280	280	280	280	280	3.2	3.5	3.8	4.2	4.6	5.3	6.0	7.1	9.6	280	200	180	230	150	130
22	290	290	290	290	290	2.6	2.9	3.1	3.5	3.9	4.4	5.0	5.9	8.0	290	210	190	240	150	130
20	300	300	300	300	300	2.2	2.3	2.6	2.8	3.2	3.6	4.1	4.8	6.5	300	220	200	250	160	140

<sup>1)</sup> Sealing tape KS required (deflection of 2 mm has been allowed for)

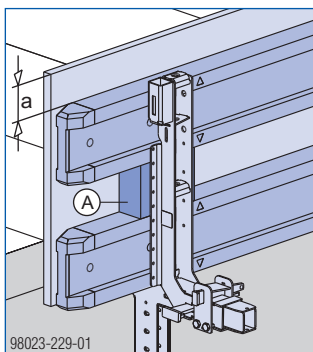
<sup>2)</sup> When used without Sealing tape KS, the influences must be reduced by 20% (deflection 1 mm)

<sup>3)</sup> Max. influence when erected with guardrail boards 20 cm: 120 cm; with guardrail boards 15 cm: 170 cm; Protective grating XP 2.70x1.20m: 250 cm

<sup>4)</sup> 2 Doka beams H20 required (see Practical example)

<sup>5)</sup> For dimensioning when using alternative (i.e. non-Doka) anchorages

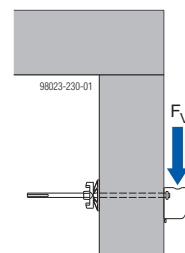
<sup>6)</sup> Possible only with 2nd-generation Floor end-shutter clamps (see the 'Distinguishing feature' graphic)

**Practical example**  
**Stop-end with 2 Doka beams H20**

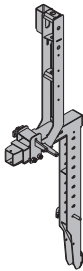

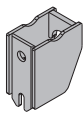



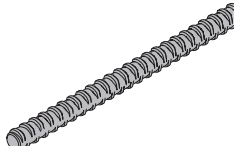






a ... max. 10 cm

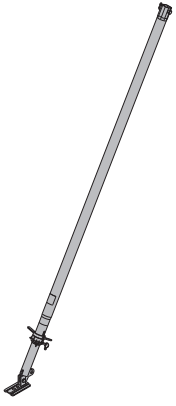



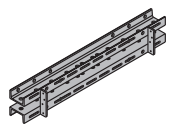
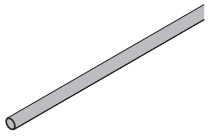

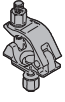
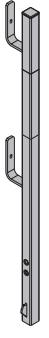


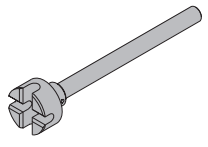
**A** Wooden spacer

Permitted vertical load  $F_V$  on End-shutter shoe (without horizontal load): 3 kN

**NOTICE**

Every stop-end element must be supported by 2 Doka floor end-shutter clamps. This requires planning!

	[kg]	Article N°		[kg]	Article N°
<b>Doka floor end-shutter clamp</b> Doka-Deckenabschalklemme <div>  <div> Galvanised  Height: 137 cm </div> </div>	12.5	586239000	<b>Nailing cone 15.0</b> Nagelkonus 15,0 <div>  <div> Black  Length: 7 cm </div> </div>	0.02	581897000
<b>End-shutter shoe</b> Abschalschuh <div>  <div> Galvanised  Height: 13.5 cm </div> </div>	1.6	586257000	<b>Hole plug 29mm</b> Gesimsankerstopfen 29mm <div>  <div> PE  Grey  Diameter: 3 cm </div> </div>	0.003	581891000
<b>End-shutter tie rod 15.0 15-40cm</b> Abschalanker 15,0 15-40cm <div>  <div> Galvanised  Length: 55 cm </div> </div>	0.91	586258000	<b>Universal plug R20/25</b> Kombi-Ankerstopfen R20/25 <div>  <div> Blue  Diameter: 3 cm </div> </div>	0.003	588180000
<b>Tie rod 15.0mm galvanised 0.50m</b> 0.72 581821000 <b>Tie rod 15.0mm galvanised 0.75m</b> 1.1 581822000 <b>Tie rod 15.0mm galvanised 1.00m</b> 1.4 581823000 <b>Tie rod 15.0mm galvanised 1.25m</b> 1.8 581826000 <b>Tie rod 15.0mm galvanised 1.50m</b> 2.2 581827000 <b>Tie rod 15.0mm galvanised 1.75m</b> 2.5 581828000 <b>Tie rod 15.0mm galvanised 2.00m</b> 2.9 581829000 <b>Tie rod 15.0mm galvanised 2.50m</b> 3.6 581852000 <b>Tie rod 15.0mm galvanised .....m</b> 1.4 581824000 <b>Tie rod 15.0mm non-treated 0.50m</b> 0.73 581870000 <b>Tie rod 15.0mm non-treated 0.75m</b> 1.1 581871000 <b>Tie rod 15.0mm non-treated 1.00m</b> 1.4 581874000 <b>Tie rod 15.0mm non-treated 1.25m</b> 1.8 581886000 <b>Tie rod 15.0mm non-treated 1.50m</b> 2.1 581876000 <b>Tie rod 15.0mm non-treated 1.75m</b> 2.5 581887000 <b>Tie rod 15.0mm non-treated 2.00m</b> 2.9 581875000 <b>Tie rod 15.0mm non-treated 2.50m</b> 3.6 581877000 <b>Tie rod 15.0mm non-treated 3.00m</b> 4.3 581878000 <b>Tie rod 15.0mm non-treated 3.50m</b> 5.0 581888000 <b>Tie rod 15.0mm non-treated 4.00m</b> 5.7 581879000 <b>Tie rod 15.0mm non-treated 5.00m</b> 7.2 581880000 <b>Tie rod 15.0mm non-treated 6.00m</b> 8.6 581881000 <b>Tie rod 15.0mm non-treated 7.50m</b> 10.7 581882000 <b>Tie rod 15.0mm non-treated .....m</b> 1.4 581873000 Ankerstab 15,0mm <div>  <div>  </div> </div>			<b>Anchor bracket M</b> Ankerbügel M <div>  <div> Galvanised  Width: 8 cm  Height: 16 cm </div> </div>	1.2	580558000
			<b>Plumbing strut 260 IB</b> Justierstütze 260 IB <div>  <div> Galvanised  Length: 146.8 - 256.7 cm </div> </div>	12.8	588437500
<b>Super plate 15.0</b> Superplatte 15,0 <div>  <div> Galvanised  Height: 6 cm  Diameter: 12 cm  Width-across: 27 mm </div> </div>	1.1	581966000	<b>Plumbing strut 340 IB</b> Justierstütze 340 IB <div>  <div> Galvanised  Length: 190.8 - 341.8 cm </div> </div>	16.7	588696000
<b>Bridge edge beam anchor 15.0</b> <b>Bridge edge beam anchor 15.0 galv.</b> Gesimsanker 15,0 <div>  <div> Length: 7 cm  Follow the directions in the "Fitting instructions"! </div> </div>	0.45 0.44	581896000 581890000			

	[kg]	Article N°		[kg]	Article N°
<b>Plumbing strut 540 IB</b> Justierstütze 540 IB  Galvanised Length: 310.5 - 549.2 cm	30.7	588697000	<b>Handrail post 1.00m</b> Geländer 1,00m  Galvanised Length: 124 cm	3.8	584335000
<b>Strut shoe EB</b> Strebenschuh EB  Galvanised Width: 8 cm Height: 13 cm	0.93	588946000	<b>Handrail post 1.10m</b> Schutzgeländer 1,10m  Galvanised Height: 134 cm	5.5	584384000
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			Scaffold tube 48.3mm 0.50m 1.7 682026000 Scaffold tube 48.3mm 1.00m 3.6 682014000 Scaffold tube 48.3mm 1.50m 5.4 682015000 Scaffold tube 48.3mm 2.00m 7.2 682016000 Scaffold tube 48.3mm 2.50m 9.0 682017000 Scaffold tube 48.3mm 3.00m 10.8 682018000 Scaffold tube 48.3mm 3.50m 12.6 682019000 Scaffold tube 48.3mm 4.00m 14.4 682021000 Scaffold tube 48.3mm 4.50m 16.2 682022000 Scaffold tube 48.3mm 5.00m 18.0 682023000 Scaffold tube 48.3mm 5.50m 19.8 682024000 Scaffold tube 48.3mm 6.00m 21.6 682025000 Scaffold tube 48.3mm .....m 3.6 682001000 Gerüstrohr 48,3mm  Galvanised		
<b>Doka express anchor 16x125mm</b> Doka-Expressanker 16x125mm  Galvanised Length: 18 cm Follow the directions in the "Fitting instructions"!	0.31	588631000	<b>Screw-on coupler 48mm 50</b> Anschraubkupplung 48mm 50  Galvanised Width-across: 22 mm Follow the directions in the "Fitting instructions"!	0.84	682002000
<b>Handrail post XP 1.20m</b> Geländersteher XP 1,20m  Galvanised Height: 118 cm	4.1	586460000	<b>Normal coupler 48mm</b> Normalkupplung 48mm  Galvanised Width-across: 22 mm Follow the directions in the "Fitting instructions"!	1.2	682004000
<b>Toeboard holder XP 1.20m</b> Fußwehrhalter XP 1,20m  Galvanised Height: 21 cm	0.64	586461000	<b>Tie-rod wrench 15.0/20.0</b> Ankerstabschlüssel 15,0/20,0  Galvanised	1.8	580594000
			<b>Sealing tape KS 10x3mm 10m</b> 0.07 581840000 <b>Sealing tape KS 20x5mm 10m</b> 0.17 580348000 Dichtungsband KS		

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