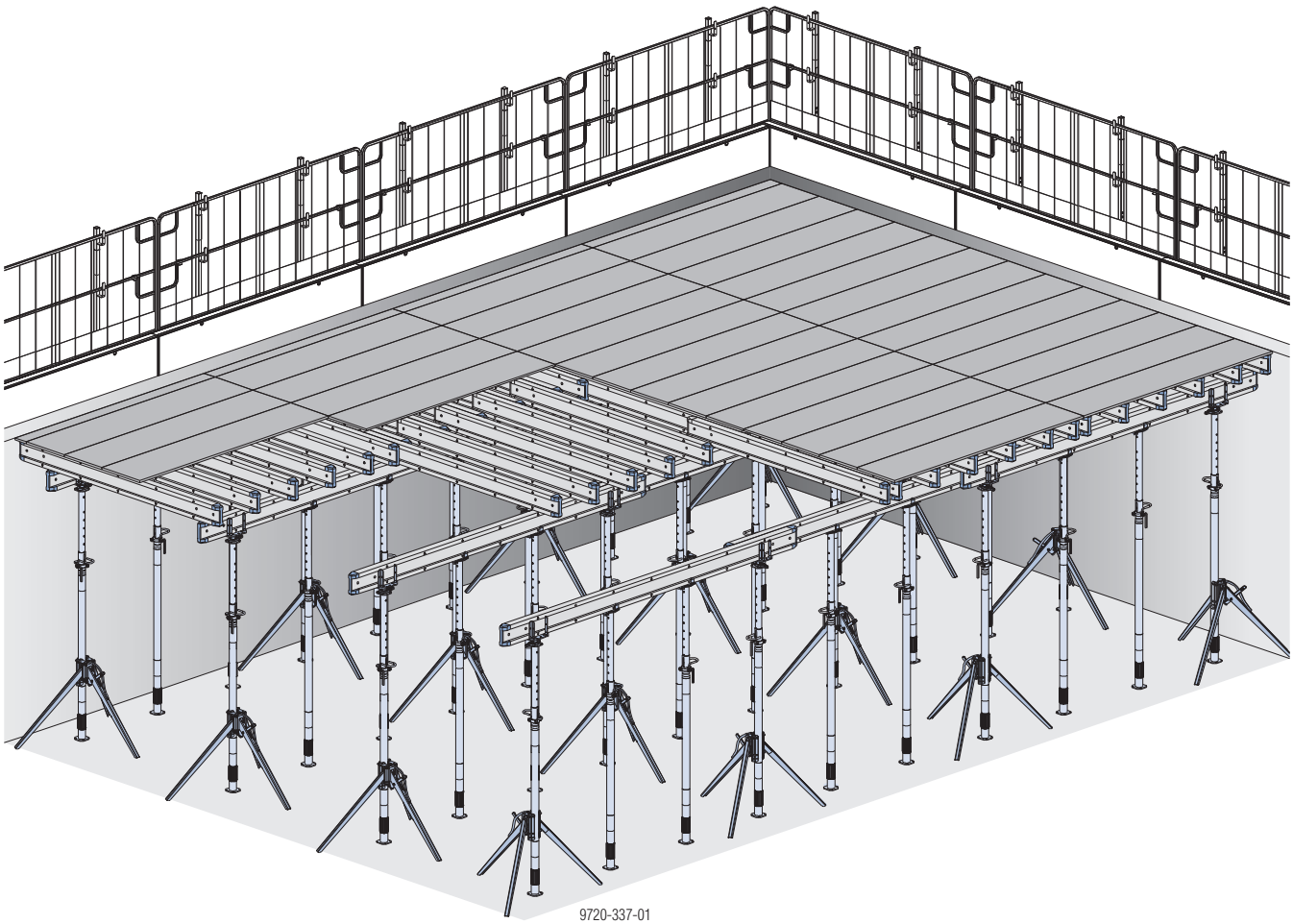
999776002 - 08/2024
en-GB

The Formwork Experts.

Dokaflex

User Information

Instructions for assembly and use (Method statement)



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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.

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.

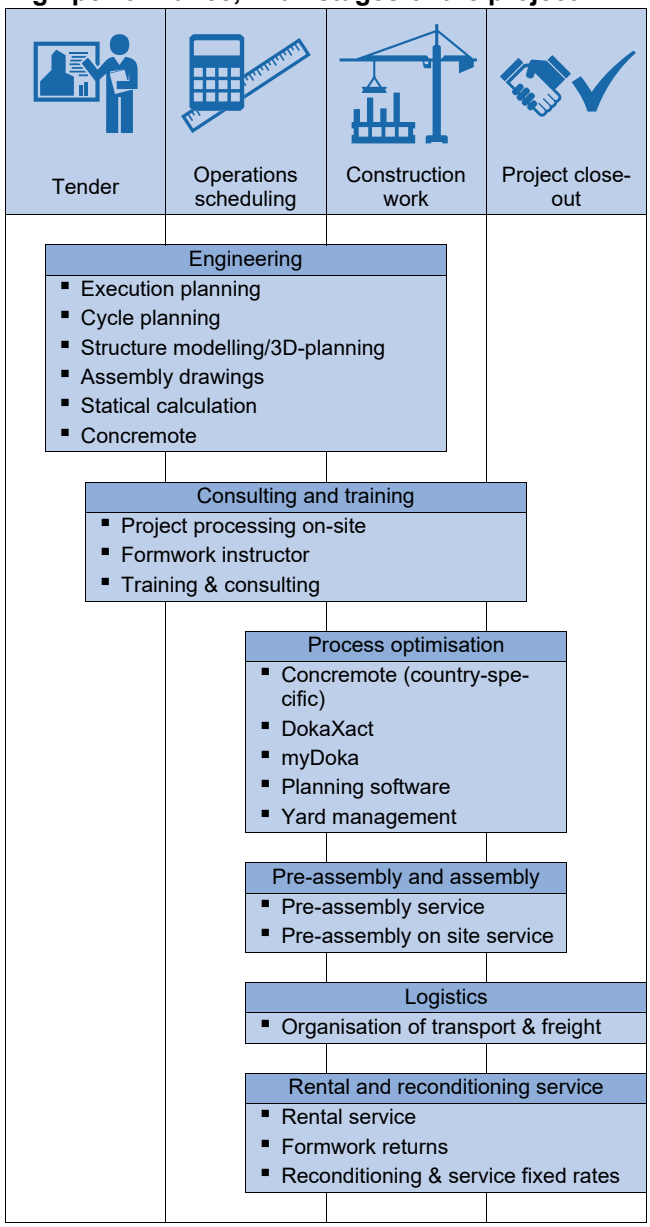
Just-in-time availability

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



Digital Services
for higher productivity in construction

From planning to completion of construction - with our digital services we want to set the pace for boosting productivity in construction. Our digital portfolio includes solutions for planning, procuring and managing to performing on site. Learn more about our digital offer at doka.com/digital.

System description

The versatile handset system for forming floor-slabs is ideal for enclosed spaces where the formwork superstructure can rest up against walls on all sides.

Horizontal forces at exposed slab-edges, downturned beams or steps in ceiling slabs must be restrained by bracing or tie-backs.

Advantages of Dokaflex:

- Closure zones for easy adaptation to walls and columns resolvable within the system.
- Shoring heights of up to 5.50 m.
- Any type of form-facing can be used.
- Combinable with Doka tableforms and panel floor formwork systems.

Design variants

	Dokaflex 1-2-4	Dokaflex 20	Dokaflex XT
Perm. floor-prop load	20 kN	20 kN	30 kN
Eurex 20 top Eurex 20 eco	✓	✓	✓[1)]
Eurex 30 top Eurex 30 eco	✓	✓	✓
Primary beam	Doka beam H20 3.90m	Doka beam H20[2)]	Doka beam XT20[2)]
Secondary beam	Doka beam H20 2.65m	Doka beam H20[2)]	Doka beam H20[2)]

[1)] Use permitted only if extension length is reduced. Follow the directions in the appropriate User Information booklets.

[2)] Length, project-specific.

Dokaflex 1-2-4

The easy-to-use floor formwork with a logical, built-in system for setting up the formwork

- Marks on the beams show you the maximum spacings between secondary beams, props and primary beams, for floor-slabs up to a thickness of 30 cm.
- Having only 2 different lengths of beam facilitates logistics and reduces the time spent searching.
- You can tell at a glance whether the formwork has been set up correctly.

Dokaflex 20

The tailor-made solution for your specific project requirements:

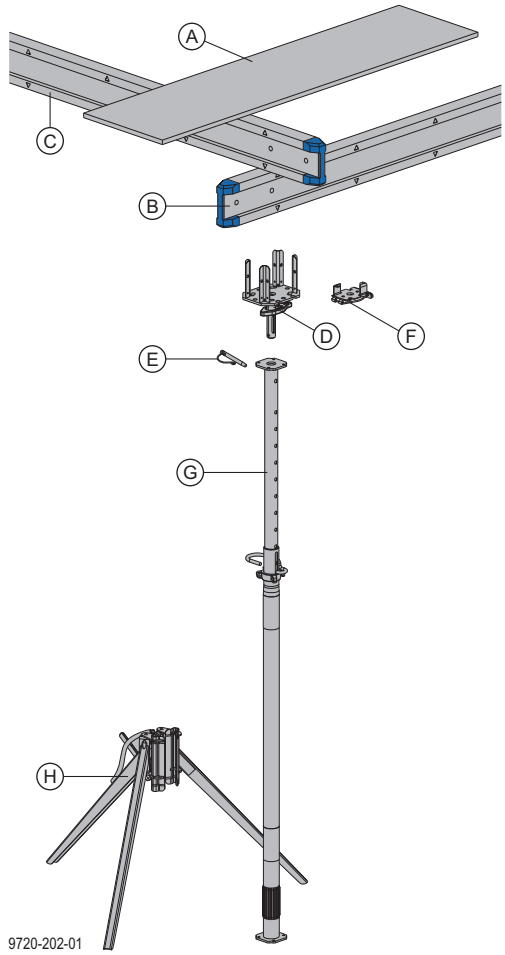
- Very little equipment is needed thanks to statically optimised beam and prop spacings, which are in accordance with the room geometry and the loads that occur.
- Drop beams and floor extensions can easily be managed 'within the system'.

Dokaflex XT

The fast floor formwork for forming large areas:

- The timber-beam floor formwork with particularly sturdy components reduces the number of items needed and is fast to erect and dismantle, resulting in savings in labour costs.
- Fast working, as less equipment is needed:
  - Up to 1/3 fewer floor props due to higher load-bearing capacity of the Doka beam XT20.
- Less space required for storage and transport.
- Wide access paths beneath the floor formwork.
- Reduced follow-up costs.

System parts



A	Doka formwork sheet 3-SO
B	Doka beam H20 or XT20 (primary beam)
C	Doka beam H20 (secondary beam)
D	Lowering head H20
E	Spring locked connecting pin 16mm
F	Supporting head H20 DF
G	Doka floor props Eurex
H	Removable folding tripod top, eco or 1.20m

Doka formwork sheet 3-SO

- choice timber and superior surface coating for a high-quality concrete finish
- all-round edge strip, so easier cleaning
- can be used on both sides

Follow the directions in the 'Formwork sheets' User Information booklet.

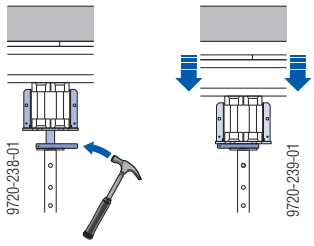
Doka beam H20 and XT20

- 1-2-4 method: easy-to-distinguish primary beams (3.90 m) and secondary beams (2.65 m) are used.
- Dokaflex 20: also other beam lengths can be used.
- When using H20 top:
  - Pre-defined positioning points as reference marks for setting-up and checking the formwork.
  - Iintegrated shock absorber on the beam end piece for reduced damage and long service life.
- For materials optimisation, the Doka beam XT20 can also be used as primary beam.

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

Lowering head H20

- integrated quick-lowering function for minimising damage when striking
- stabilises the primary beams so that these cannot tip over on their sides



Supporting head H20 DF

- easy to mount to the floor prop
- for fixing intermediate props to the primary beam

Doka floor props Eurex

- EN 1065-compliant floor prop
- high load-bearing capacity
  - permitted load-bearing capacity of Eurex 20: 20 kN
- numbered pegging holes for height adjustment
- special geometry of the thread makes the prop easier to release even under high load
- elbowed fastening clamps, reducing the risk of injury and making the props easier to operate

Follow the directions in the 'Floor props Eurex top', 'Floor props Eurex eco' or 'Floor props Eurex 20 LW' User Information booklet.

Note:
The floor props can be lengthened with the Floor prop extension 0.50m (allow for the reduced load-bearing capacity).

Follow the directions in the 'Floor prop extension 0.50m' User Information booklet.

NOTICE
The Doka floor prop **Eurex 20 top 700** is only allowed to be used with a **limited extension length**.

Follow the directions in the 'Doka floor prop Eurex 20 top 700' User Information booklet.

Removable folding tripod top, eco and 1.20m

- Set-up aid for floor props
- swing-out legs allow flexible placement in constricted situations such as along edges and in corners

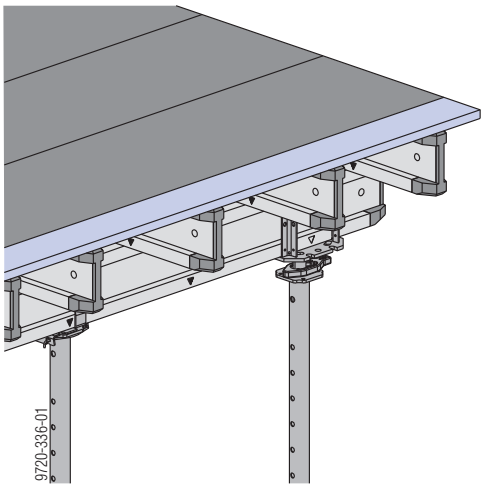
CAUTION
Not a substitute for the bracing necessary for load-bearing towers.
➤ Use as a set-up aid only!

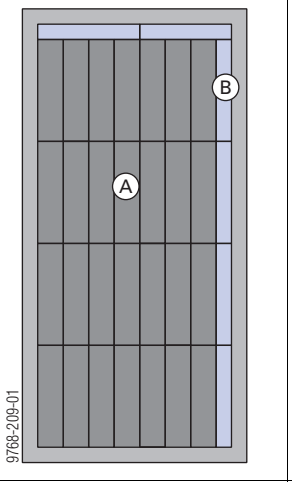
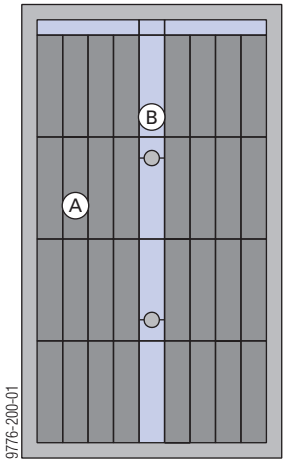
Follow the directions in the 'Removable folding tripod eco (Dokaflex)' User Information booklet.

Adaptability

Closures and adjustments

Infill zones are solved within the system - with no special accessories needed. The necessary adaptation is made by **telescoping the Doka beams** and inserting **strips of formwork sheeting**.



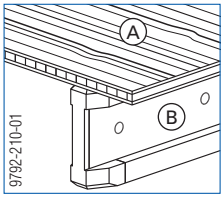
Adaptation along edge	Adaptation around columns
	

A Doka formwork sheet 3-SO

B Fitting board in the closure zone

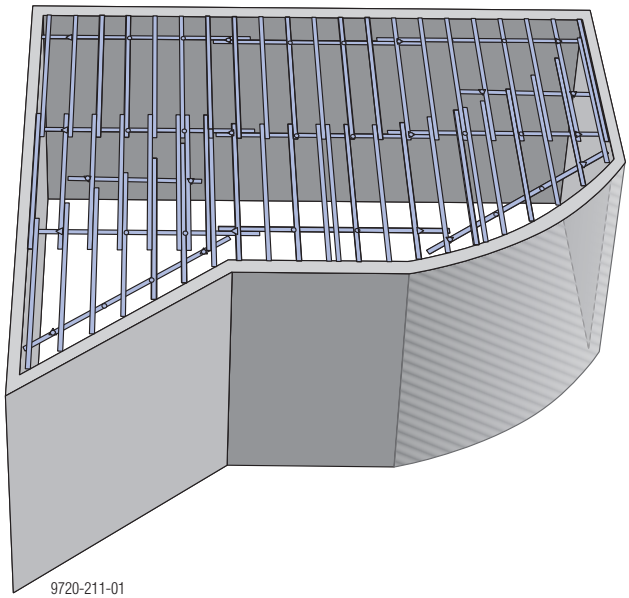
NOTICE

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



Grid and flexibility - in one system

Dokaflex also adapts to difficult layouts.



Structural design

Dokaflex 1-2-4

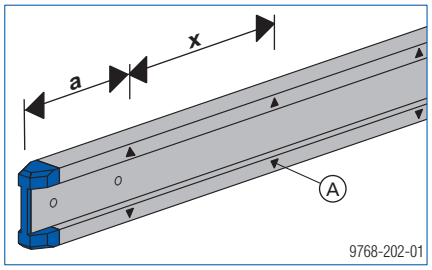
The straightforward logic underlying the Dokaflex 1-2-4 system means that there is no need for planning and operations scheduling work.

The quantities required are easily calculated with the ‘Dokaflex 1-2-4’ materials slide calculator.

Spacing and positions of the component parts

No matter whether the beams are resting on, between or next to the marks, the maximum spacing is always plain to see.

You can tell at a glance whether the formwork has been erected correctly, and without having to do any measuring.



a ... min. 30 cm
x ... 0.5 m

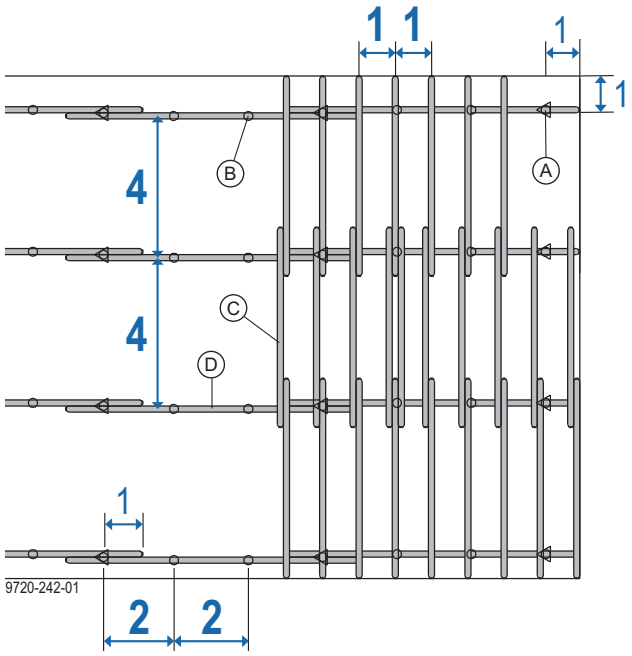
A	Mark

1 mark = 0.5 m
- max. spacing of secondary beams

2 marks = 1.0 m
- max. spacing of floor props

4 marks = 2.0 m
- max. spacing of primary beams

First mark at beam end (a)
- max. cantilever of edge beam
- min. cantilever in primary-beam overlap zone



A	Floor prop Eurex + Lowering head H20 + Removable folding tripod
B	Floor prop Eurex + Supporting head H20 DF
C	Doka beam H20 top 2.65 m (secondary beam)
D	Doka beam H20 top 3.90m (primary beam)

Primary and secondary beams

The **3.90m** long **Doka beam H20 top** is used as a **primary beam**, and the **2.65m long H20 top beam** as a **secondary beam**.

The primary beams should be orientated at right angles to the direction of an uneven length/width of room (5 m, 7 m, 9 m, etc.). This makes more efficient use of the potential of the system.

Format of the formwork sheets

The Doka formwork sheets 3-SO, in formats of **200x50cm** and **250x50cm** (21 or 27mm), have just the right dimensions to fit exactly into the increment-grid of the Dokaflex system.

Dokaflex 20

The quantities of Dokaflex system components can be computed exactly, with reference to the thickness of slab.
The beam and floor-prop spacings are optimised depending on the layout, and in accordance with the floor-slab load.

The permitted spacings of the primary beams and floor props are easily calculated with the ‘Dokaflex 20’ slide calculator.

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Max. secondary-beam spacing, according to the sheeting used

Slab thickness [cm]	Max. secondary-beam spacing **c** [m] when using the following sheeting											
	3-SO 21mm		3-SO 27mm		Dokaplex 18mm		Dokaplex 21mm		DokaPly eco 18mm		DokaPly eco 21mm	
Limit of deflection	l/500	l/350	l/500	l/350	l/500	l/350	l/500	l/350	l/500	l/350	l/500	l/350
up to 18	0.667	0.75	0.75	0.75	0.50	0.50	0.667	0.75	0.33	0.50	0.33	0.75
up to 25	0.667	0.667	0.75	0.75	0.50	0.50	0.50	0.667	0.33	0.50	0.33	0.667
up to 30	0.625	0.667	0.75	0.75	0.33	0.50	0.50	0.625	—	0.50	0.33	0.625
up to 40	0.50	0.625	0.667	0.75	0.33	0.50	0.50	0.50	—	0.50	0.33	0.50
up to 50	0.50	0.50	0.667	0.75	0.33	0.33	0.33	0.50	—	0.33	—	0.50

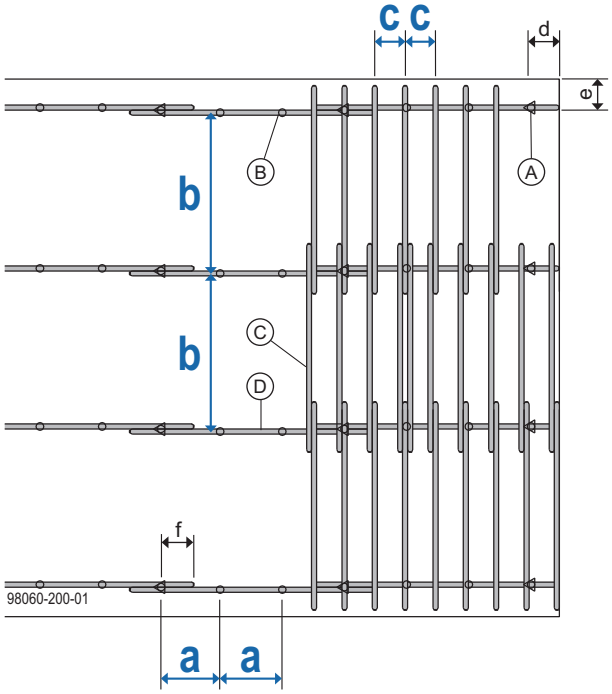
In accordance with EN 12812, a service load of 0.75 kN/m² and a variable load of 10% of a massive concrete floor-slab, totalling at least 0.75 kN/m², but no more than 1.75 kN/m², are allowed for (assuming a fresh-concrete density of 2500 kg/m³).
Only the dead weight of the formwork and fresh concrete has been allowed for in calculating deflection.
In the case of cavity flat-slab floors, the floor-slab loads are considerably lower.

Optimisation of beam and floor-prop spacings

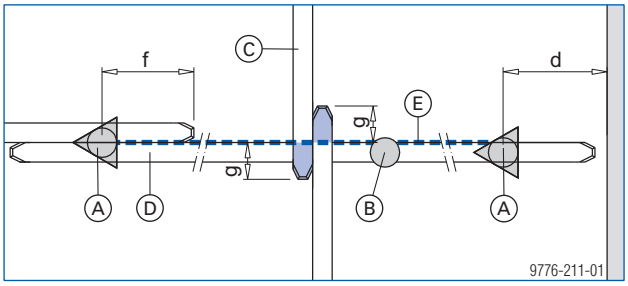
Slab thick-ness [cm]	Floor-slab load [1] [kN/m²]	Perm. primary-beam spacing [2] **b** [m] for a secondary-beam spacing [2] **c** [m] of					Perm. floor-prop spacing [3] **a** [m] for the selected primary-beam spacing [2] **b** [m] of									
		0.333	0.500	0.625	0.667	0.750	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.50
10	4.25	4.00	3.69	3.43	3.35	3.22	2.93	2.72	2.50	2.32	2.17	2.04	1.88	1.71	1.57	1.34
12	4.74	4.00	3.49	3.24	3.17	3.05	2.77	2.57	2.37	2.20	2.05	1.87	1.69	1.53	1.41	—
14	5.23	3.82	3.33	3.09	3.03	2.91	2.65	2.46	2.26	2.09	1.91	1.70	1.53	1.39	1.27	—
16	5.72	3.66	3.20	2.97	2.91	2.79	2.54	2.36	2.16	2.00	1.75	1.55	1.40	1.27	1.16	—
18	6.21	3.53	3.08	2.86	2.80	2.69	2.45	2.27	2.07	1.84	1.61	1.43	1.29	1.17	1.07	—
20	6.71	3.42	2.98	2.77	2.71	2.61	2.37	2.18	1.99	1.70	1.49	1.33	1.19	1.08	—	—
22	7.20	3.31	2.90	2.69	2.63	2.53	2.30	2.11	1.85	1.59	1.39	1.24	1.11	1.01	—	—
24	7.69	3.22	2.82	2.61	2.56	2.46	2.24	2.04	1.73	1.49	1.30	1.16	1.04	0.95	—	—
26	8.18	3.14	2.75	2.55	2.49	2.40	2.18	1.96	1.63	1.40	1.22	1.09	0.98	0.89	—	—
28	8.67	3.07	2.68	2.49	2.44	2.34	2.13	1.85	1.54	1.32	1.15	1.03	0.92	—	—	—
30	9.16	3.00	2.62	2.44	2.38	2.29	2.08	1.75	1.46	1.25	1.09	0.97	0.87	—	—	—
35	10.49	2.86	2.50	2.32	2.27	2.18	1.91	1.52	1.27	1.09	0.95	0.85	0.76	—	—	—
40	11.84	2.74	2.39	2.22	2.17	2.09	1.69	1.35	1.13	0.97	0.84	0.75	—	—	—	—
45	13.19	2.63	2.30	2.14	2.09	2.01	1.52	1.21	1.01	0.87	0.76	0.67	—	—	—	—
50	14.54	2.55	2.22	2.06	2.02	1.92	1.38	1.10	0.92	0.79	0.69	—	—	—	—	—

[1] In accordance with EN 12812, this allows for a service load of 0.75 kN/m² and a variable load of 10% of a massive concrete floor-slab, totalling at least 0.75 kN/m² but no more than 1.75 kN/m² (assuming a fresh-concrete density of 2500 kg/m³). Mid-span deflection has been limited to l/500.
In the case of cavity flat-slab floors, significantly lower floor-slab loads occur.
[2] Doka beam H20 top to EN 13377.
[3] Doka floor prop with a permitted load-bearing capacity of ≥ 20 kN.

Spacing and positions of the component parts



Close-up: primary-beam overlap / cantilevered length of secondary beams



a ... floor-prop spacing (see table)
b ... primary-beam spacing (see table)
c ... secondary-beam spacing (see table)
d … max. 50 cm or half of floor-prop spacing
e ... max. 50 cm
f ... min. 30 cm
g ... min. 15 cm cantilevered length of secondary beams (measured from the primary-beam axis)

A	Floor prop Eurex + Lowering head H20 + Removable folding tripod
B	Floor prop Eurex + Supporting head H20 DF
C	Doka beam H20 top (secondary beam)
D	Doka beam H20 top (primary beam)
E	Primary-beam axis

Dokaflex XT

Doka beam XT20 as primary beam

The quantities of Dokaflex system components can be computed exactly, with reference to the thickness of slab.

The beam and floor-prop spacings are optimised depending on the layout, and in accordance with the floor-slab load.

Max. secondary-beam spacing, according to the sheeting used

Slab thickness [cm]	Max. secondary-beam spacing **c** [m] when using the following sheeting											
	3-SO 21mm		3-SO 27mm		Dokaplex 18mm		Dokaplex 21mm		DokaPly eco 18mm		DokaPly eco 21mm	
Limit of deflection	l/500	l/350	l/500	l/350	l/500	l/350	l/500	l/350	l/500	l/350	l/500	l/350
up to 18	0.667	0.75	0.75	0.75	0.50	0.50	0.667	0.75	0.33	0.50	0.33	0.75
up to 25	0.667	0.667	0.75	0.75	0.50	0.50	0.50	0.667	0.33	0.50	0.33	0.667
up to 30	0.625	0.667	0.75	0.75	0.33	0.50	0.50	0.625	—	0.50	0.33	0.625
up to 40	0.50	0.625	0.667	0.75	0.33	0.50	0.50	0.50	—	0.50	0.33	0.50
up to 50	0.50	0.50	0.667	0.75	0.33	0.33	0.33	0.50	—	0.33	—	0.50

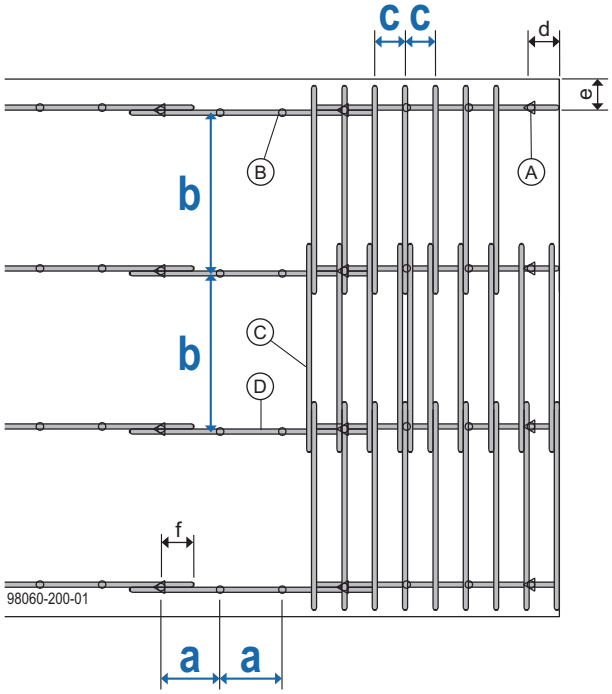
In accordance with EN 12812, a service load of 0.75 kN/m² and a variable load of 10% of a massive concrete floor-slab, totalling at least 0.75 kN/m², but no more than 1.75 kN/m², are allowed for (assuming a fresh-concrete density of 2500 kg/m³).
Only the dead weight of the formwork and fresh concrete has been allowed for in calculating deflection.
In the case of cavity flat-slab floors, the floor-slab loads are considerably lower.

Optimisation of beam and floor-prop spacings

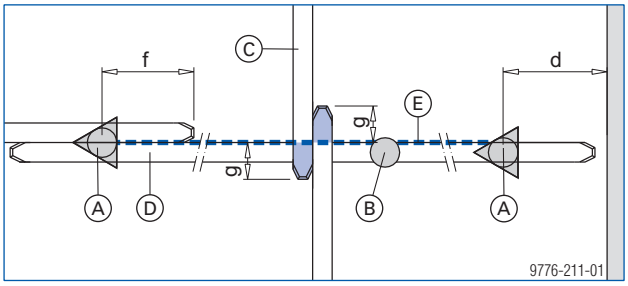
Slab thick-ness [cm]	Floor-slab load [1] [kN/m²]	Perm. primary-beam spacing [4] **b** [m] for a secondary-beam spacing [2] **c** [m] of					Perm. floor-prop spacing [3] **a** [m] for the selected primary-beam spacing [4] **b** [m] of									
		0.333	0.500	0.625	0.667	0.750	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.50
10	4.25	4.00	3.69	3.43	3.35	3.22	3.20	2.97	2.79	2.65	2.54	2.42	2.30	2.19	2.10	1.94
12	4.74	4.00	3.49	3.24	3.17	3.05	3.03	2.81	2.64	2.51	2.40	2.29	2.17	2.07	1.98	1.81
14	5.23	3.82	3.33	3.09	3.03	2.91	2.89	2.68	2.52	2.40	2.29	2.18	2.07	1.97	1.89	1.64
16	5.72	3.66	3.20	2.97	2.91	2.79	2.77	2.57	2.42	2.30	2.20	2.09	1.98	1.89	1.75	1.50
18	6.21	3.53	3.08	2.86	2.80	2.69	2.67	2.48	2.33	2.22	2.12	2.00	1.90	1.76	1.61	1.38
20	6.71	3.42	2.98	2.77	2.71	2.61	2.58	2.40	2.26	2.14	2.04	1.93	1.79	1.63	1.49	—
22	7.20	3.31	2.90	2.69	2.63	2.53	2.51	2.33	2.19	2.08	1.97	1.85	1.67	1.52	1.39	—
24	7.69	3.22	2.82	2.61	2.56	2.46	2.44	2.27	2.13	2.02	1.91	1.73	1.56	1.42	1.30	—
26	8.18	3.14	2.75	2.55	2.49	2.40	2.38	2.21	2.08	1.97	1.83	1.63	1.47	1.33	1.22	—
28	8.67	3.07	2.68	2.49	2.44	2.34	2.32	2.16	2.03	1.92	1.73	1.54	1.38	1.26	1.15	—
30	9.16	3.00	2.62	2.44	2.38	2.29	2.27	2.11	1.99	1.87	1.64	1.46	1.31	1.19	1.09	—
32	9.68	2.94	2.57	2.39	2.33	2.24	2.23	2.07	1.94	1.77	1.55	1.38	1.24	1.13	—	—
34	10.22	2.88	2.52	2.34	2.29	2.20	2.18	2.03	1.91	1.68	1.47	1.30	1.17	1.07	—	—
36	10.76	2.83	2.47	2.30	2.25	2.16	2.14	1.99	1.86	1.59	1.39	1.24	1.12	1.01	—	—
38	11.30	2.78	2.43	2.26	2.21	2.12	2.11	1.96	1.77	1.52	1.33	1.18	1.06	0.97	—	—
40	11.84	2.74	2.39	2.22	2.17	2.09	2.07	1.92	1.69	1.45	1.27	1.13	1.01	—	—	—
45	13.19	2.63	2.30	2.14	2.09	2.01	1.99	1.82	1.52	1.30	1.14	1.01	0.91	—	—	—
50	14.54	2.55	2.22	2.06	2.02	1.92	1.93	1.65	1.38	1.18	1.03	0.92	0.83	—	—	—
55	15.89	2.47	2.16	2.00	1.94	1.83	1.87	1.51	1.26	1.08	0.94	0.84	—	—	—	—
60	17.24	2.40	2.10	1.93	1.87	1.70	1.74	1.39	1.16	0.99	0.87	0.77	—	—	—	—
65	18.59	2.34	2.04	1.86	1.77	1.58	1.61	1.29	1.08	0.92	0.81	0.72	—	—	—	—
70	19.93	2.28	1.99	1.77	1.65	1.47	1.50	1.20	1.00	0.86	0.75	0.67	—	—	—	—
75	21.19	2.23	1.94	1.66	1.56	1.38	1.42	1.13	0.94	0.81	0.71	—	—	—	—	—
80	22.42	2.18	1.89	1.57	1.47	1.31	1.34	1.07	0.89	0.76	0.67	—	—	—	—	—
85	23.65	2.14	1.84	1.49	1.39	1.24	1.27	1.01	0.85	0.72	0.63	—	—	—	—	—
90	24.87	2.10	1.77	1.42	1.33	1.18	1.21	0.96	0.80	0.69	0.60	—	—	—	—	—
95	26.10	2.06	1.69	1.35	1.26	1.12	1.15	0.92	0.77	0.66	0.57	—	—	—	—	—
100	27.33	2.03	1.61	1.29	1.21	1.07	1.10	0.88	0.73	0.63	0.55	—	—	—	—	—

[1] In accordance with EN 12812, this allows for a service load of 0.75 kN/m² and a variable load of 10% of a massive concrete floor-slab, totalling at least 0.75 kN/m² but no more than 1.75 kN/m² (assuming a fresh-concrete density of 2500 kg/m³). Mid-span deflection has been limited to l/500.
In the case of cavity flat-slab floors, significantly lower floor-slab loads occur.
[2] Doka beam H20 top to EN 13377.
[3] Doka floor prop with a permitted load-bearing capacity of ≥ 30 kN.[4] Doka beam XT20 pursuant to national technical approval n° Z-9.1-920.

Spacing and positions of the component parts



Close-up: primary-beam overlap / cantilevered length of secondary beams



a ... floor-prop spacing (see table)
b ... primary-beam spacing (see table)
c ... secondary-beam spacing (see table)
d … max. 50 cm or half of floor-prop spacing
e ... max. 50 cm
f ... min. 30 cm
g ... min. 15 cm cantilevered length of secondary beams (measured from the primary-beam axis)

A	Floor prop Eurex + Lowering head H20 + Removable folding tripod
B	Floor prop Eurex + Supporting head H20 DF
C	Doka beam H20 top (secondary beam)
D	Doka beam XT20 (primary beam)
E	Primary-beam axis

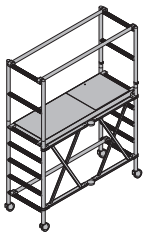
Instructions for assembly and use (Method statement)

NOTICE

As well as the instructions given here, you must follow the instructions in the section headed Reshoring props, concrete technology and stripping out.

Wheel-around scaffold DF:

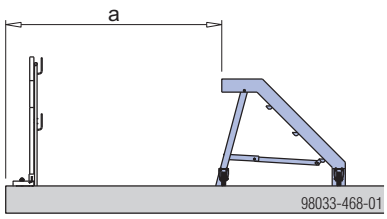
- Collapsible wheel-around platform made of light alloy
- Variable working heights of up to 3.50 m (max. platform height 1.50 m)
- Width of scaffold: 0.75 m
- When work is being carried out near drop-off edges (i.e. at a distance of < 2 m), the Wheel-around scaffold DF accessory set (consisting of a toeboard and intermediate guardrail) is needed.



For greater heights than this, the **Working scaffold Modul** is ideal.

Platform stairway 0.97m:

- Wheel-around, fold-down platform stairway made of light alloy
- Working heights of up to 3.00 m (max. standing height 0.97 m)
- Stair width: 1.20 m
- Minimum distance **a** from drop-off edge: 2.00 m

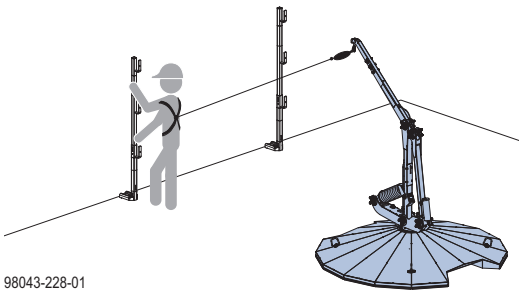


NOTICE

For manual transport, grip the floor prop only by the outer and inner tubes.

FreeFalcon

A fall arrester such as the FreeFalcon provides a mobile anchorage point for the safety harness.



WARNING

Risk of falling at open edges!

- ➤ The crew must use personal fall-arrest systems (e.g. safety harnesses) until all fall protection has been installed.
- ➤ Suitable anchorage points must be defined by an approved person appointed by the contractor.

User instruction prior to use of the FreeFalcon is mandatory.
Follow the directions in the 'FreeFalcon' Operating Instructions.

Closing the formwork

NOTICE

Windproofing

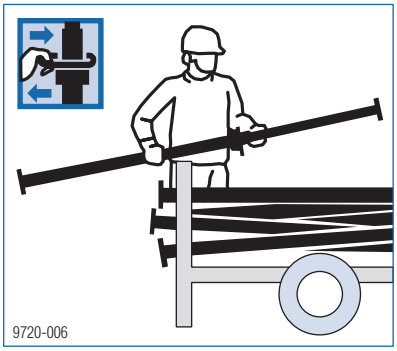
- For increased stability, in larger rooms, the full erection sequence of ‘primary beams + secondary beams + formwork sheets’ should be carried out progressively for successive sub-areas of the room.
  When doing this, provide suitable bracing to walls or columns.
- If there is any risk of the formwork being blown over, all free-standing, non-enclosed areas of floor formwork must be secured during work-breaks and when work finishes for the day.

Putting up floor props

➤ **Design variant 'Dokaflex 1-2-4':** Lay the primary beams and secondary beams down on the ground, along the walls.
The marks on the beams show you the maximum spacings:
- 4 marks for primary beams
- 6 marks for props with Removable folding tripods (final prop spacing after installation of the intermediate props - 2 marks)

➤ **Design variants 'Dokaflex 20' and 'Dokaflex XT':** Measure up the positions of the floor props.

➤ Roughly adjust the height of the floor prop, using the fastening clamp. The pegging holes are all numbered, which makes it easier to adjust the props to the same height.

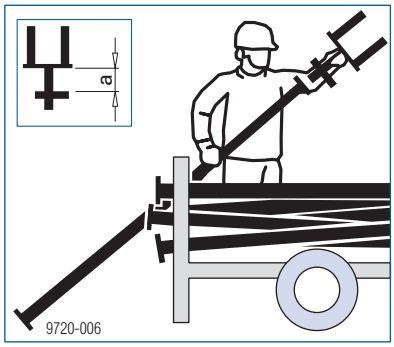


- The fastening clamp **(A)** has to be pushed all the way into the floor prop.
- Adjusting nut **(B)** has to be tightened into contact with the fastening clamp.

CAUTION

➤ If you do transport the floor props with the lowering heads still attached, you must secure these with a Spring locked connecting pin 16mm to prevent them dropping out. This is particularly important when they are transported in the horizontal.

➤ Insert a Lowering head H20 into the floor prop. Leave the correct amount of lowering play (a)!



Clearance **a** between wedge and head plate: 6 cm

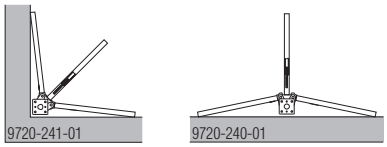
➤ Set up each Removable folding tripod.

NOTICE

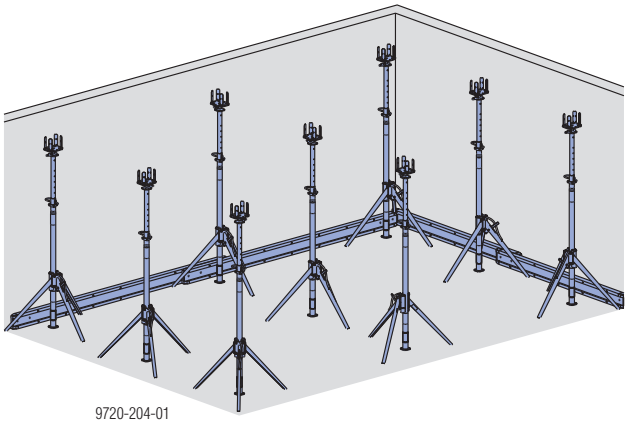
➤ Do not oil or grease wedged connections.

➤ Put the floor prop into the tripod and fix it in place with the clamping lever.

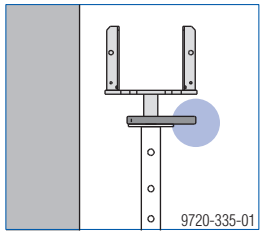
Setting up tripods in corners or against walls



If it is not possible to completely unfold the legs of the tripod – e.g. at the edges of a structure or at floor breakthroughs etc. – we recommend fastening this tripod to an adjacent floor prop instead, where there is room for the legs to be completely unfolded.



The lowering heads under edge primary beams must all be turned to the position in which the wedges can be knocked open when the formwork is stripped.



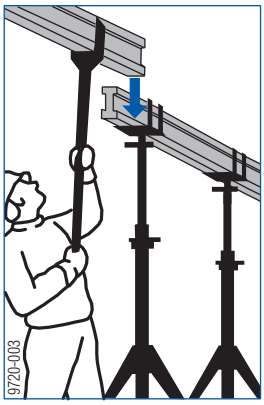
Inserting the primary beams

The lowering heads can support both single beams (on edge-of-room props) and double beams (at overlaps).

WARNING
Loads applied non-centrally can cause overloading of the system.
➤ Ensure that all loads are applied centrally!


9776-102-01

➤ Using beam forks, place the primary beams into the lowering heads.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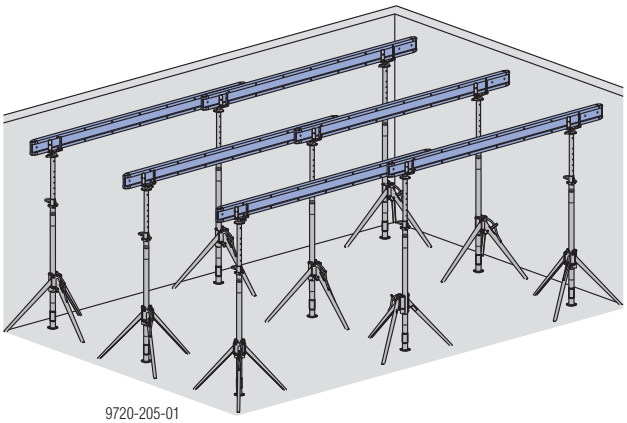
➤ Adjust the primary beams to the correct room height.

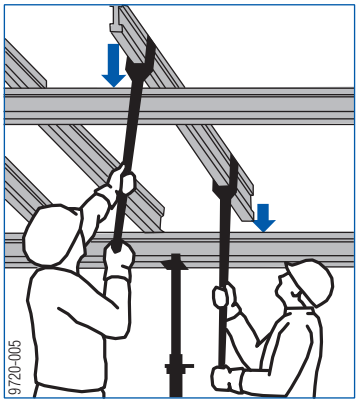

9720-205-01

- Planks can be attached to the floor props as diagonal braces, using the Bracing clamp B.
- Bracing frame Eurex 1.00m can also be used as a set-up aid.

For details on set-up aids, see the section headed Increasing the stability.

Placing the secondary beams on the primary beams

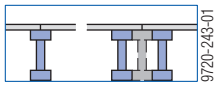
➤ Use the beam forks to place the secondary beams on the primary beams, with an overlap.

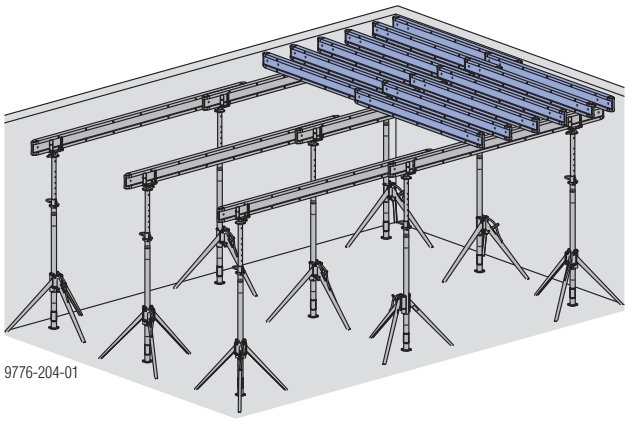

9720-005

Design variant ‘Dokaflex 1-2-4’: Maximum spacing of secondary beams - 1 mark
Design variant ‘Dokaflex 20’ and ‘Dokaflex XT’: Measure up the positions of the secondary beams.

➤ If it is planned to lay the panels on the secondary beams working from below, always lay only as many secondary beams in place as are needed for placing the next row of panels.

Place a beam (or double beam) wherever there is to be a joint between the panels.


9720-243-01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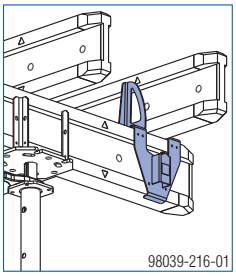
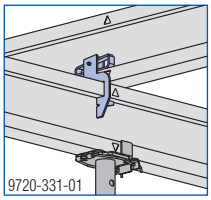
Secondary beam stabilisers or Connector clips H20 can be used as anti-tip protection for the secondary beams.

- Secondary-beam stabiliser:



- Connector clip H20:

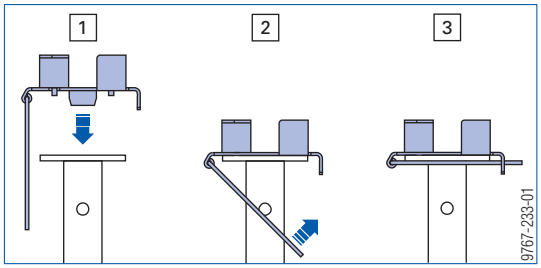


Putting up intermediate props

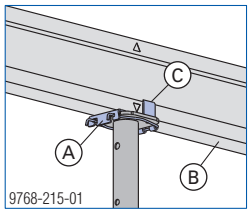
NOTICE

- ➤ Put up the intermediate props so that they force-fit. When the installation sequence as stated here is adhered to, it is enough to hand-tighten the props against the bottom flange.
- ➤ Make sure that the Supporting head H20 DF is correctly screwed up against the bottom flange.
- ➤ Setting individual props higher than others is not permitted!
- ➤ Additional securing of the intermediate prop with chipboard screw 4x35 or nail through the hole in the supporting head is optional.

➤ Place the Supporting head H20 DF on the inside tube of the floor prop and secure it with the integral spring-steel stirrup.



➤ Set up intermediate props.
Design variant ‘Dokaflex 1-2-4’: Maximum spacing of floor props - 2 marks
Design variant ‘Dokaflex 20’ and ‘Dokaflex XT’: Measure up the positions of the floor props.



A	Supporting head H20 DF
B	Doka beam H20
C	Bore in the Supporting head

Laying the formwork sheets

NOTICE

When working from below:

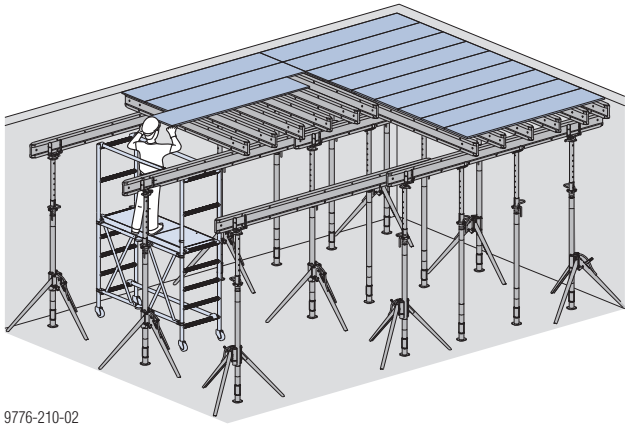
➤ To lay Doka formwork sheets 3-SO on the secondary beams from below, always work from a Wheel-around scaffold DF, a Platform stairway 0.97m or a standard mobile scaffold tower or platform ladder.

NOTICE

When working from above:

➤ Even as early as when laying the formwork sheeting, comply with the warnings for stepping on to the surface of the formwork.

➤ Lay the Doka formwork sheets 3-SO at right angles to the secondary beams.



9776-210-02

Where necessary (e.g. in edge zones), secure the formwork sheets with nails.

Recommended nail lengths

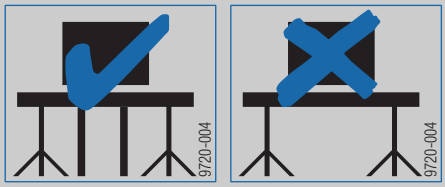
- Sheet thickness of 21 mm: approx. 50 mm
- Sheet thickness of 27 mm: approx. 60 mm

WARNING

➤ Before anybody steps onto the surface of the formwork, its stability must be ensured (for example with Bracing frames Eurex, bracing or tie-backs). Follow the instructions in the section headed Increasing the stability.

➤ It is not permitted to set down loads on the floor formwork (e.g. beams, formwork sheets, reinforcement steel) until after the intermediate props have been set up and adequate stability has been established!

➤ Transfer of horizontal loads during pouring must be ensured by other measures (e.g. by transferring these loads into the structure or using tie-backs). For details on how to make tie-backs with lashing straps, see the section headed Floor formwork around edges.



NOTICE

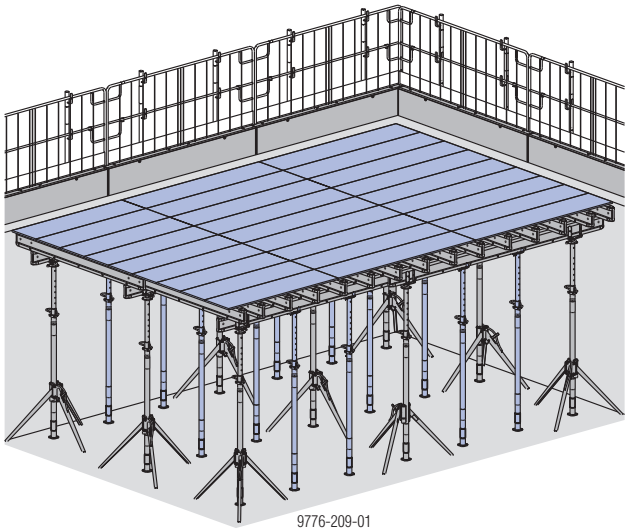
➤ Use personal fall-arrest systems to protect against fall hazards when working on unsecured slab-edges (e.g. safety harness).

➤ Install fall protection around all exposed edges.

➤ Mount the slab stop-ends

For more information, see the section headed Floor formwork around edges.

➤ Spray the formwork sheets 3-SO with release agent.



9776-209-01

Use at high floor-to-slab heights

WARNING

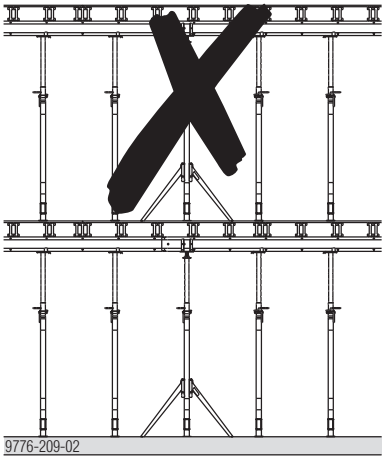
Stacked Dokaflex configurations lack stability!

Stacked Dokaflex can lead to collapse and consequently these configurations are prohibited.

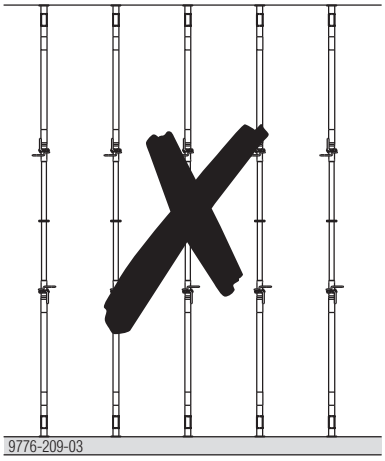
Connecting floor props one on top of another is also prohibited.

➤ Use floor props of adequate length or load-bearing towers as propping.

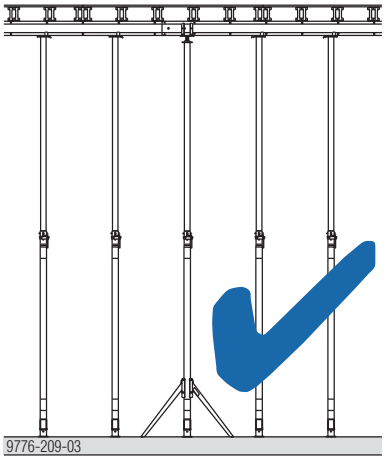
Stacked Dokaflex



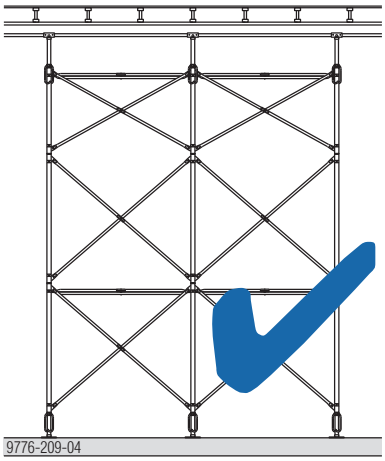
Floor props set one on top of another



Floor props of adequate length



Load-bearing tower



Pouring

➤ Before pouring, recheck all floor props.

- The fastening clamp **(A)** has to be pushed all the way into the floor prop.
- Adjusting nut **(B)** has to be tightened into contact with the fastening clamp.

To protect the surface of the form-facing, we recommend using a vibrator with a protective rubber cap.

Stripping the formwork

NOTICE

Comply with the stipulated stripping times.

Concremote provides reliable, standards-compliant information on the strength development of concrete on the site, in real-time.

Follow the directions in the 'Concremote' User Information booklet.

Note:

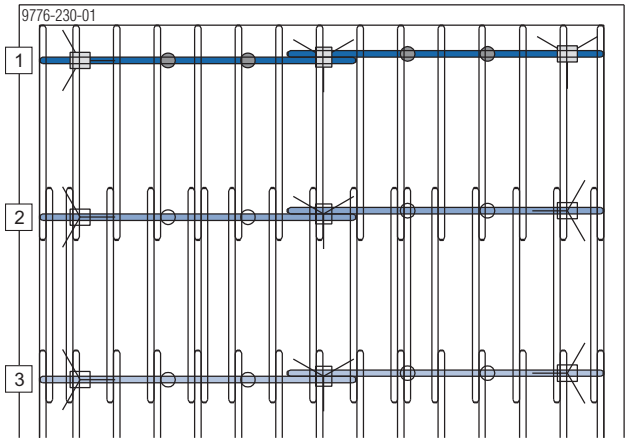
For more information, see the section headed Reshoring props, concrete technology and stripping out.

Lowering the floor formwork

NOTICE

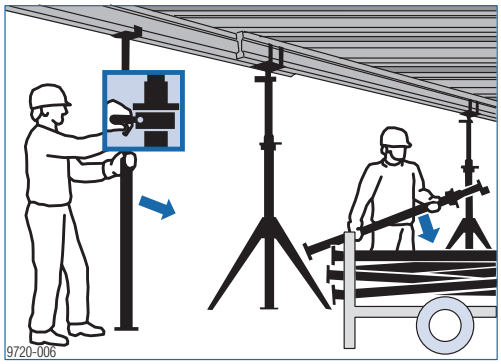
The basic rule is:

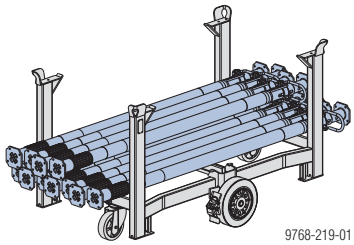
- Stress-release the floor props row by row.
- Stress-release should always be carried out working **from one side towards the other, or from the middle of the floor-slab (mid-span) towards the slab edges**.
  For wide spans, this procedure MUST be followed!
- Stress-release must **NEVER** be carried out **from both sides towards the middle**!



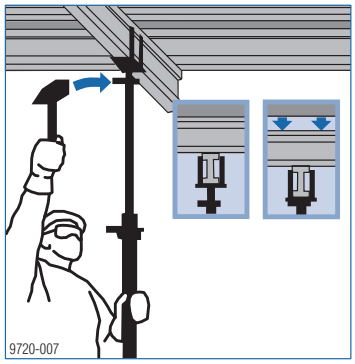
Stress-releasing the first row

➤ Remove the intermediate props and put them in the stacking pallet.





➤ Lower the floor formwork by striking the wedge on the lowering head with a hammer.

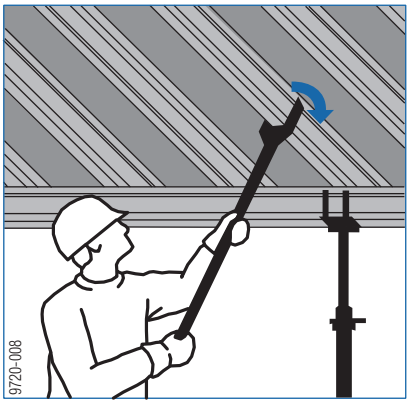


Stress-releasing next rows

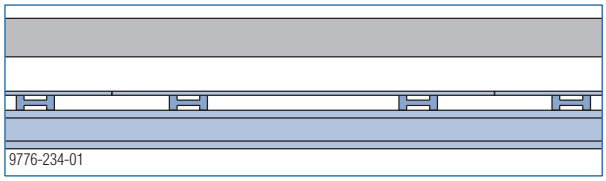
➤ Stress-release the next rows one after the other in the same way.

Removing parts that are no longer needed

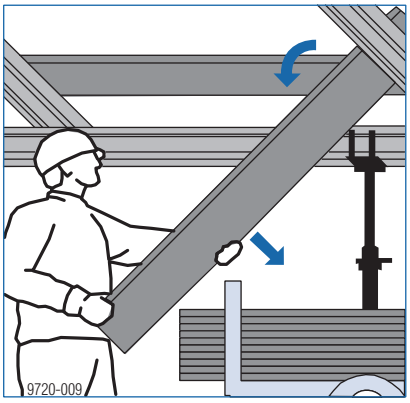
➤ Turn the secondary beams over onto their sides, pull them out and put them in the stacking pallet.



➤ Leave enough beams in position to secure the formwork sheets.



➤ Remove the formwork sheets and put them in the stacking pallet.



➤ Remove the remaining secondary beams and the primary beams, and put them in the stacking pallet.

Removing the floor props

➤ Bring the floor prop into a horizontal position.
➤ If necessary, open the fastening clamp and push the inner tube into the outer tube.
➤ Put the removable folding tripods and floor props in the stacking pallet.

It is best to keep floor props and lowering heads separate for repositioning (floor props on their own can be stacked closer together in the stacking pallet).

Reshoring

➤ Install reshoring before the floor-slab is subjected to live load, or at the latest before the concrete for the next floor-slab up is poured.

Note:

For more information, see the section headed Reshoring props, concrete technology and stripping out.

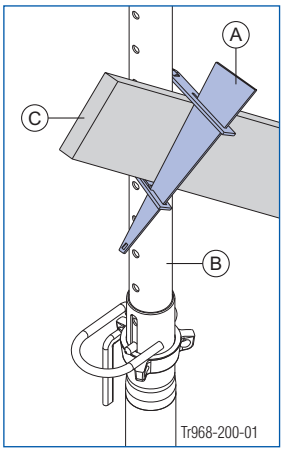
Increasing the stability

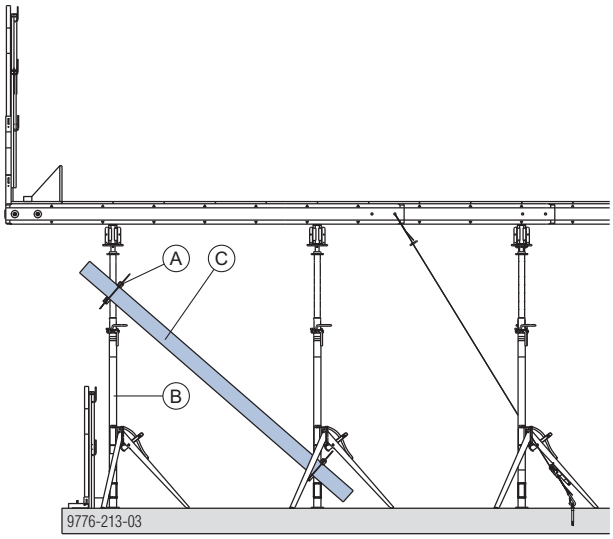
Bracing clamp B

Planks can be attached to the floor props as diagonal braces, using the Bracing clamp B.

NOTICE

- Used as a set-up aid and takes horizontal loads during assembly.
- **Not suitable** for sustaining horizontal loads during pouring.
- Always hammer in the wedge from top to bottom!





A Bracing clamp B
B Doka floor prop
C Plank

Possible plank/floor-prop combinations with the Bracing clamp B

Eurex 20	Plank											
	2.4 x 15		3 x 15		4 x 15		5 x 10		5 x 12		5 x 15	
	IT	OT	IT	OT	IT	OT	IT	OT	IT	OT	IT	OT
150	—	✓	—	✓	✓	✓	✓	✓	✓	✓	✓	✓
250	—	✓	—	✓	✓	✓	✓	✓	✓	✓	✓	✓
300	—	✓	—	✓	✓	✓	✓	✓	✓	✓	✓	✓
350	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
400	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
450	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
550	✓	✓	✓	✓	✓	✓	✓	—	✓	—	✓	—

Eurex 30	Plank											
	2.4 x 15		3 x 15		4 x 15		5 x 10		5 x 12		5 x 15	
	IT	OT	IT	OT	IT	OT	IT	OT	IT	OT	IT	OT
250	—	✓	—	✓	✓	✓	✓	✓	✓	✓	✓	✓
300	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
350	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
400	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
450	✓	✓	✓	✓	✓	✓	✓	—	✓	—	✓	—
550	✓	✓	✓	✓	✓	—	✓	—	✓	—	—	—

Eco 20	Plank											
	2.4 x 15		3 x 15		4 x 15		5 x 10		5 x 12		5 x 15	
	IT	OT	IT	OT	IT	OT	IT	OT	IT	OT	IT	OT
250	—	✓	—	✓	✓	✓	✓	✓	✓	✓	✓	✓
300	—	✓	—	✓	✓	✓	✓	✓	✓	✓	✓	✓
350	—	✓	—	✓	✓	✓	✓	✓	✓	✓	✓	✓
400	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Legend:

IT	Inner tube
OT	Outer tube
✓	Possible to combine
—	Not possible to combine

Bracing frame Eurex

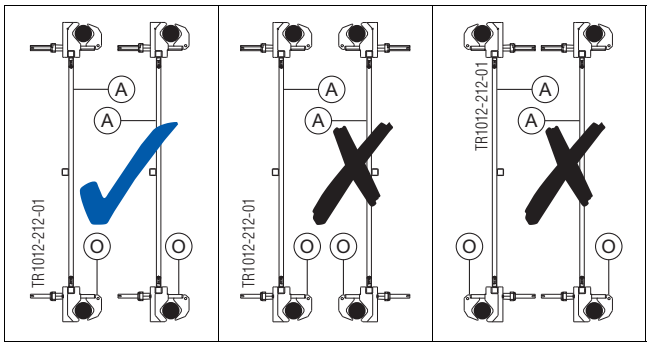
The Bracing frame Eurex fixes the Doka floor props Eurex 20 and Eurex 30 and is a stable set-up aid - especially close to the edges of floor formwork.

Features:

- Suitable for fixing to both the outer and inner tubes.
- Captively integrated quick-fixing mechanism for the Doka floor props.
- Can be used in combination with diagonal crosses.
- On uneven surfaces, higher stability is ensured during assembly.

NOTICE

- Used as a set-up aid and takes horizontal loads during assembly.
- **Not suitable** for sustaining horizontal loads during pouring.
- All the floor props must be plumb.
- The prop holders on the bracing frames must always be pointing in the same direction.



A Bracing frame Eurex
O Prop holder with quick-fixing mechanism

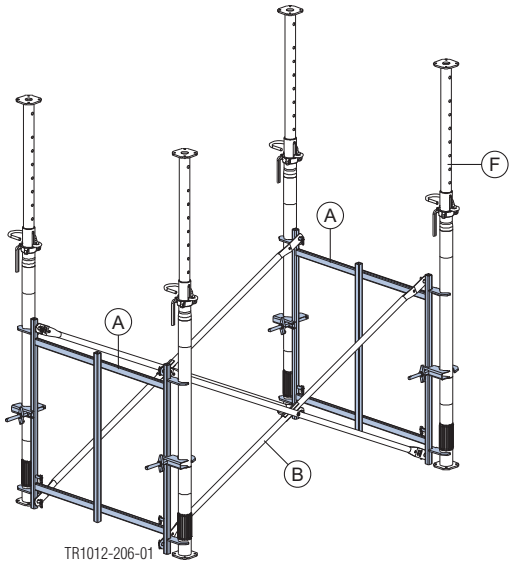
Assembly

NOTICE

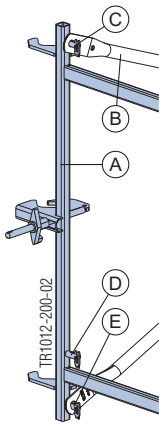
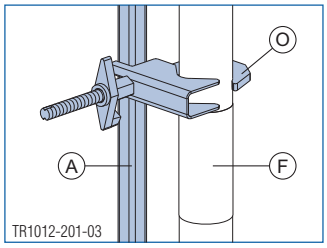
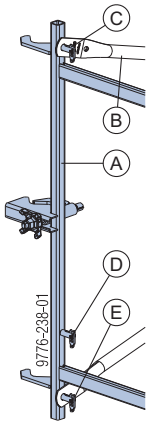
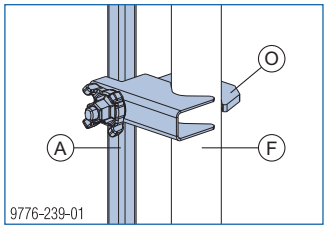
➤ Always set up the bracing frames such that the end with the two safety catches **(D)** and **(E)** is at the bottom (see Close-up 1).

➤ Join both bracing frames with diagonal crosses at top and bottom, and secure these with safety catches (Close-up 1).

➤ Fasten floor props to the bracing frame with the quick-fixing mechanism (Close-up 2).

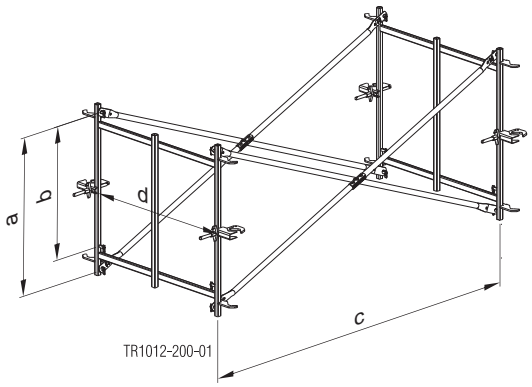


A Bracing frame Eurex
B Diagonal cross
F Doka floor prop Eurex

Close-up 1	Close-up 2
Bracing frame Eurex 0.82m or 1.22m	
	
Bracing frame Eurex 1.00m	
	

A Bracing frame Eurex
B Diagonal cross
C Safety catch 1
D Safety catch 2
E Safety catch 3
F Doka floor prop Eurex
O Prop holder with quick-fixing mechanism

Spacing of bracing frames Eurex



Bracing frame Eurex 1.00m (d = 100 cm)

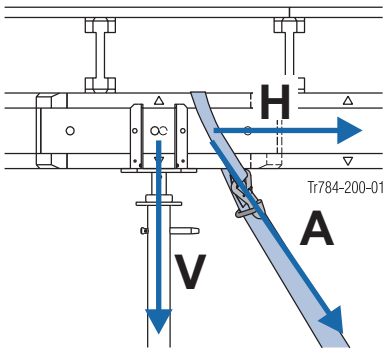
Designation	Spacing of safety catches [cm] a = 98.3	b = 80.3
	Spacing of bracing frames c [cm]	
Diagonal cross 9.100	82.4	100.0
Diagonal cross 9.150	138.9	150.0
Diagonal cross 9.165	154.9	165.0
Diagonal cross 9.175	165.5	175.0
Diagonal cross 9.200	191.8	200.0
Diagonal cross 9.250	243.5	250.0
Diagonal cross 9.300	294.6	300.0
Diagonal cross 12.060	78.1	96.5
Diagonal cross 12.100	111.8	125.3
Diagonal cross 12.150	158.1	168.0
Diagonal cross 12.165	172.4	181.5
Diagonal cross 12.175	182.0	190.6
Diagonal cross 12.200	206.1	213.8
Diagonal cross 12.250	254.9	261.1
Diagonal cross 12.300	304.1	309.4
Diagonal cross 18.100	173.4	182.4
Diagonal cross 18.150	206.3	214.0
Diagonal cross 18.165	217.5	224.7
Diagonal cross 18.175	225.2	232.2
Diagonal cross 18.200	245.1	251.6
Diagonal cross 18.250	287.3	292.9
Diagonal cross 18.300	331.8	336.6

Bracing frame Eurex 1.22m (d = 122 cm) and Bracing frame Eurex 0.81m (d = 81cm)

Designation	Spacing of safety catches [cm] a = 101.9	b = 87.6
	Spacing of bracing frames c [cm]	
Diagonal cross 9.100	77.8	93.6
Diagonal cross 9.150	136.2	145.8
Diagonal cross 9.175	163.3	171.4
Diagonal cross 9.200	189.9	196.9
Diagonal cross 9.250	242.0	247.5
Diagonal cross 9.300	293.3	297.9
Diagonal cross 12.060	73.2	89.8
Diagonal cross 12.100	108.4	120.3
Diagonal cross 12.150	155.8	164.2
Diagonal cross 12.175	180.0	187.3
Diagonal cross 12.200	204.4	210.9
Diagonal cross 12.250	253.5	258.8
Diagonal cross 12.300	302.9	307.4
Diagonal cross 18.100	171.3	179.0
Diagonal cross 18.150	204.5	211.1
Diagonal cross 18.175	223.5	229.5
Diagonal cross 18.200	243.6	249.1
Diagonal cross 18.250	286.1	290.8
Diagonal cross 18.300	330.7	334.7

Tie-back solutions

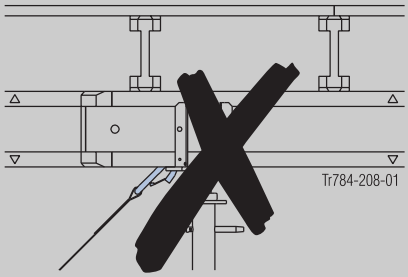
For transferring low horizontal loads (stabilisation, V/100, windproofing etc.).



H Horizontal load
V Vertical load
A Tie-back force

WARNING

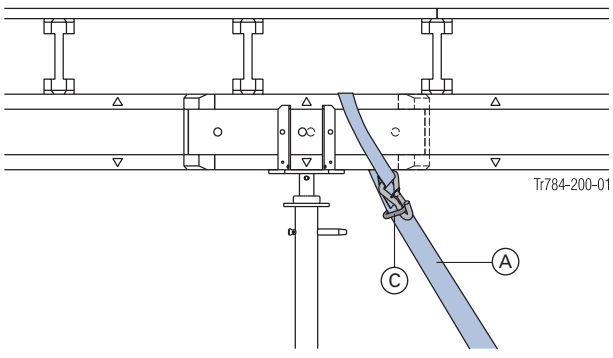
➤ Never attach the tie-back directly to head unit or floor prop!



Follow the directions in the 'Lashing strap 5.00m' User Information booklet.

Around formwork beam and Lowering head H20

Max. tie-back load: 5 kN

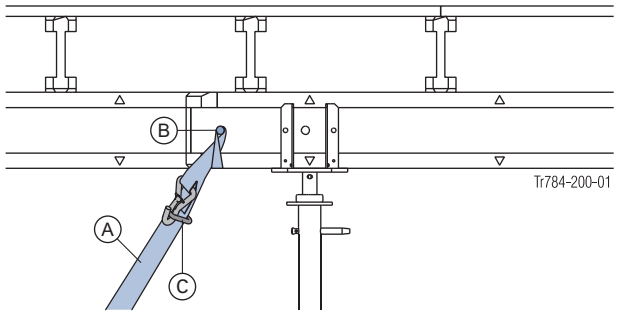


A Lashing strap 5.00m
C Triangle of the lashing strap

To a beam-hole

Tie-back attached to a diam. 20 mm tie rod or reinforcement rod placed through a beam-hole

Max. tie-back load: 5 kN

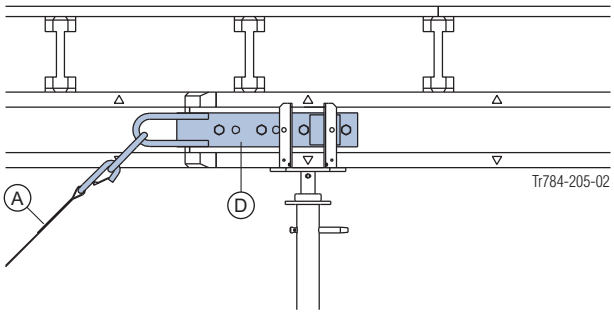


A Lashing strap 5.00m
B Diam. 20 mm tie rod or reinforcement rod
C Triangle of the lashing strap

Lifting bracket

Pre-mounted to primary beam.

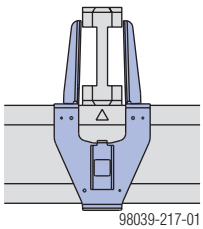
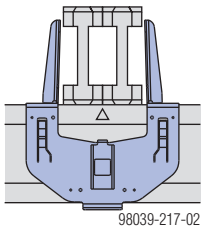
Max. tie-back load: 5 kN



A Lashing strap 5.00m
D Lifting bracket

Secondary-beam stabilisers

Secondary-beam stabilisers are used to prevent formwork beams tipping over while panels are being laid on them.

Secondary-beam stabiliser 1	Secondary-beam stabiliser 2
 98039-217-01	 98039-217-02

Benefits:

- Special claws to prevent slippage on the beam-flange
- No work-platform scaffold needed, as the stabilisers can be mounted/dismounted from ground level using an Alu beam fork H20
- Needs only small commissioning quantities, as the Secondary-beam stabilisers can be re-set in tandem with the formwork erection cycle:
  - approx. 20 Secondary-beam stabilisers 1
  - approx. 10 Secondary-beam stabilisers 2

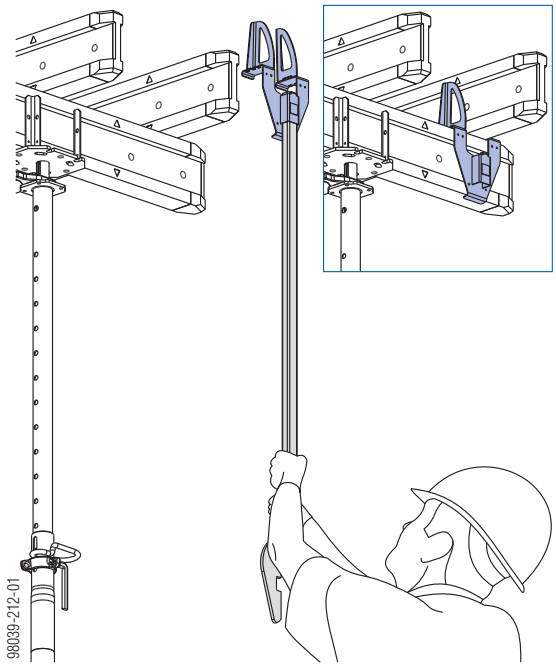
Note:

In certain special situations, (e.g. when forming inclined floor-slabs), Secondary-beam stabilisers can also be used for transferring horizontal loads.

For more information, please contact your Doka technician.

Installation:

➤ Hang the secondary-beam stabilisers into place with an Alu beam fork H20.

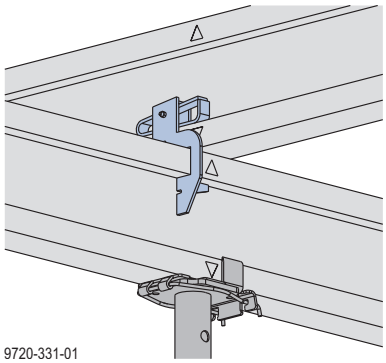


The secondary beam is now held in place.

➤ Lay the formwork sheets.

➤ After the formwork sheets have been laid, unhook and remove the secondary-beam stabilisers with an Alu beam fork H20.

Connector clips H20 can also be used as anti-tip protection for the secondary beams.



Floor formwork around edges

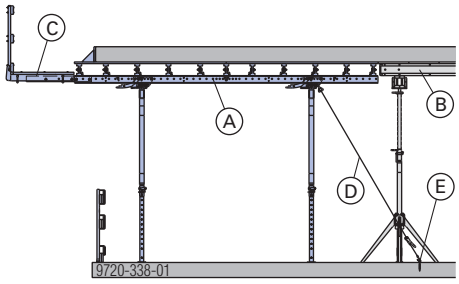
Tableforms or load-bearing towers at edge of building

It can be advantageous to combine Dokaflex with tables, particularly in edge-zones.
This is an easy, safe way of forming drop-beams and slab stop-ends, and of erecting safety railings.

For more information, see the ‘DokaXdek table’, ‘Dokamatic table’, ‘Dokaflex table’, ‘Load-bearing tower Staxo 40’ or ‘Load-bearing tower Staxo 100’ User Information booklets.

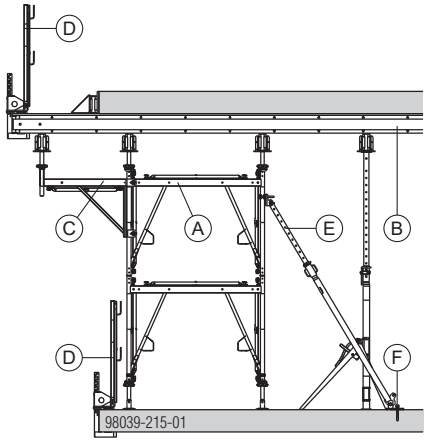
Without edge drop-beam

Configuration with tableform



A	Table
B	Dokaflex
C	Dokamatic table platform
D	Lashing strap 5.00m
E	Doka express anchor 16x125mm and Doka coil 16mm

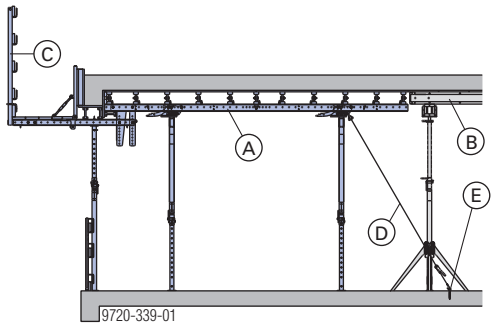
Supported by load-bearing tower



A	Load-bearing tower
B	Dokaflex
C	Staxo 40 bracket 90cm
D	Xsafe edge protection XP
E	Plumbing strut 340 for precast members
F	Doka express anchor 16x125mm and Doka coil 16mm

With edge drop-beam

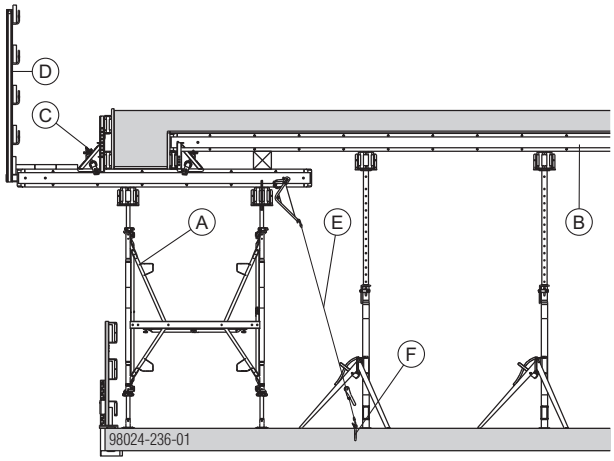
Configuration with tableform



A	Table
B	Dokaflex
C	Handrail post T 1.80m (with Toeboard holder T 1.80m), Xsafe edge protection XP, Handrail clamp S or Handrail post 1.50m
D	Lashing strap 5.00m
E	Doka express anchor 16x125mm and Doka coil 16mm

Supported by load-bearing tower

For downstand beams, the **load-bearing towers and beam forming supports** can be combined very effectively with Dokaflex.



A	Load-bearing tower
B	Dokaflex
C	Beam forming support 20
D	Handrail post T 1.80m (optionally with Toeboard holder T 1.80m), Xsafe edge protection XP, Handrail clamp S or Handrail post 1.50m
E	Lashing strap 5.00m
F	Doka express anchor 16x125mm and Doka coil 16mm

WARNING

➤ Where formwork beams cantilever out a long way, secure them against accidental lift-out.

Dokaflex at edge of building

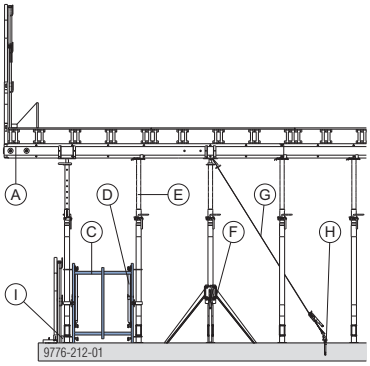
If no separate edge tables are available, the following points must be remembered when using Dokaflex:

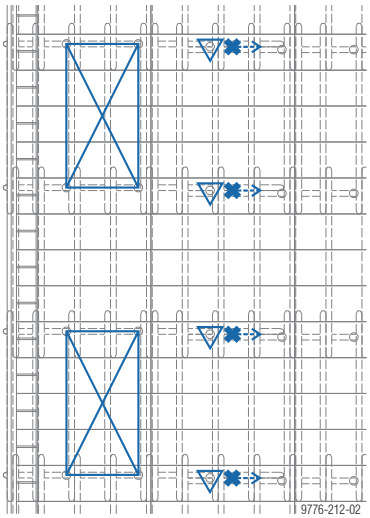
- In order to be able to transfer the horizontal forces, the superstructure components must be firmly attached to one another.
- The bracing can be fastened to either the secondary or primary beam.

WARNING

- ➤ Before anybody steps onto the surface of the formwork, its stability must be ensured (for example with Bracing frames Eurex, bracing or tie-backs). Follow the instructions in the section headed Increasing the stability.
- ➤ Secure cantilevered floor formwork to prevent lift-out and overturning.
- ➤ Secondary beams with stop-end formwork must be secured against horizontal pull-out.
- ➤ In addition, if necessary, put up a protection platform on the structure (e.g. Folding platform K).

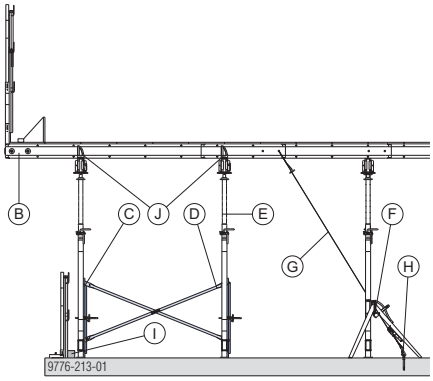
Fixing in the direction of the primary beams

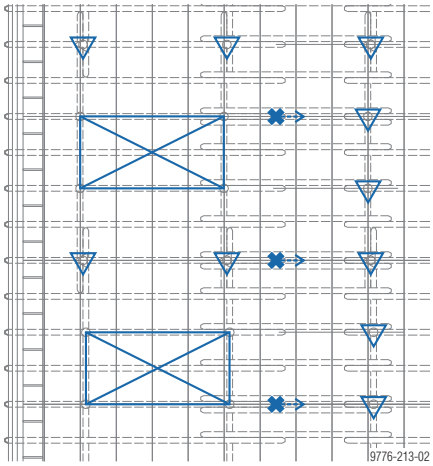




A	Doka beam H20 (primary beam)
C	Bracing frame Eurex 1.00m
D	Diagonal cross
E	Doka floor prop Eurex
F	Removable folding tripod top
G	Lashing strap 5.00m
H	Doka express anchor 16x125mm and Doka coil 16mm
I	Squared timber 10 cm x 10 cm (fall protection site-provided for scissor-type elevated work platform)

Fixing in the direction of the secondary beams





B	Doka beam H20 (secondary beam)
C	Bracing frame Eurex 1.00m
D	Diagonal cross
E	Doka floor prop Eurex
F	Removable folding tripod top
G	Lashing strap 5.00m
H	Doka express anchor 16x125mm and Doka coil 16mm
I	Squared timber 10 cm x 10 cm (fall protection site-provided for scissor-type elevated work platform)
J	Secondary-beam stabilisers

NOTICE

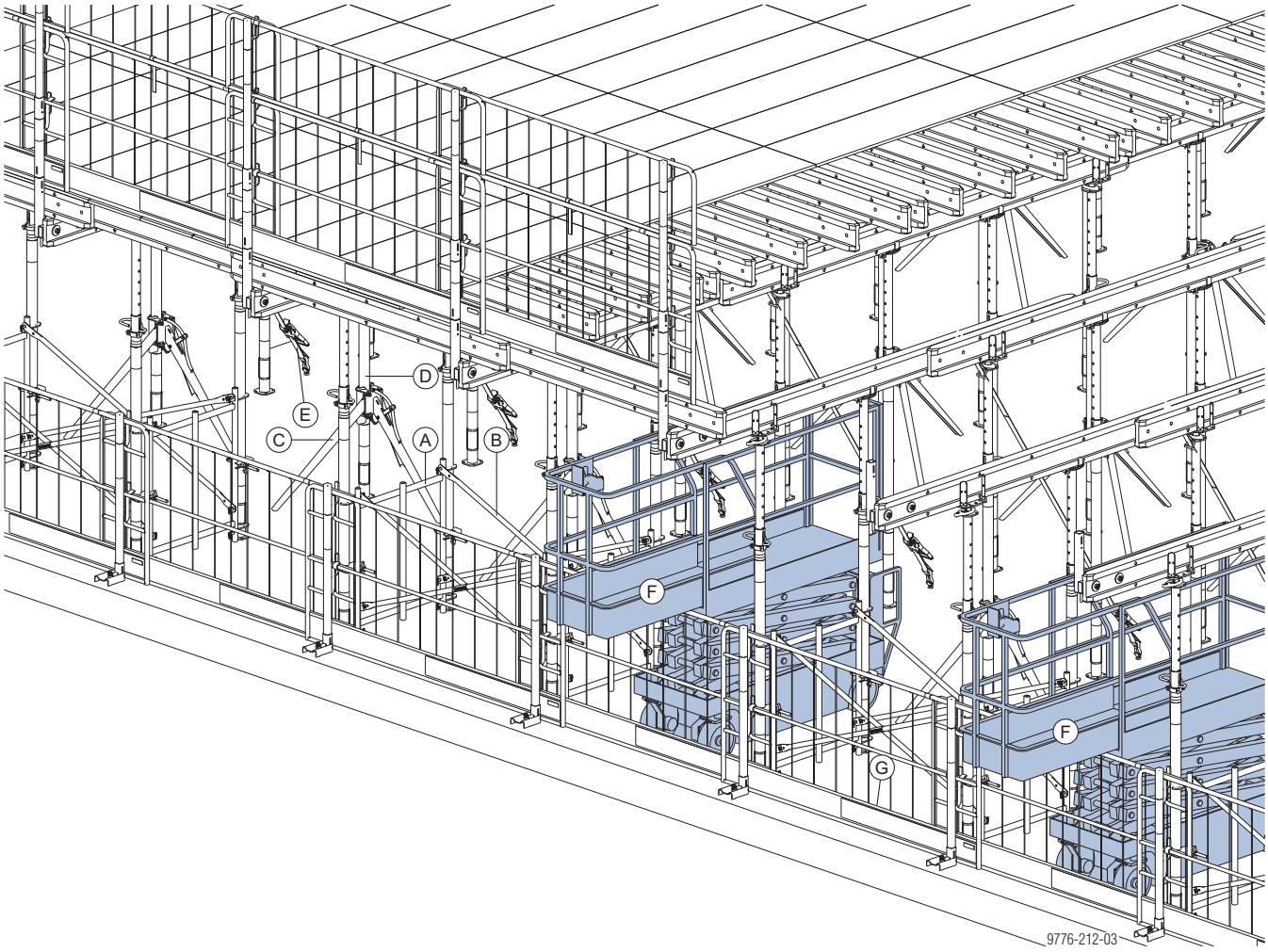
One tie-back is required for each butt join between sheets!

Legend

▽	Removable folding tripod top
⇠✖	Fixing point (e.g. with Lashing strap 5.00m) Arrow = direction of the bracing
⊠	Bracing frame Eurex with diagonal crosses

Use with scissor-type elevated work platform

Formwork and edge protection can be erected from below if scissor-type elevated work platforms with telescoping platforms are used.



A	Bracing frame Eurex 1.00m
B	Diagonal cross
C	Removable folding tripod top
D	Doka floor prop Eurex
E	Lashing strap 5.00m
F	Scissor-type elevated work platform with telescoping platform
G	Squared timber 10 cm x 10 cm (fall protection site-provided for scissor-type elevated work platform)

Use with wheel-around scaffold

NOTICE

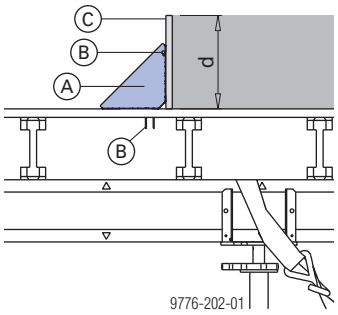
- When wheel-around scaffolds are used, the fall protection is installed by persons working on the surface of the formwork.
- Use personal fall-arrest systems to protect against fall hazards when working on unsecured slab-edges (e.g. safety harness).

Slab stop-ends

WARNING
➤ Secondary beams with stop-end formwork must be secured against horizontal pull-out.

Universal end-shutter support 30cm

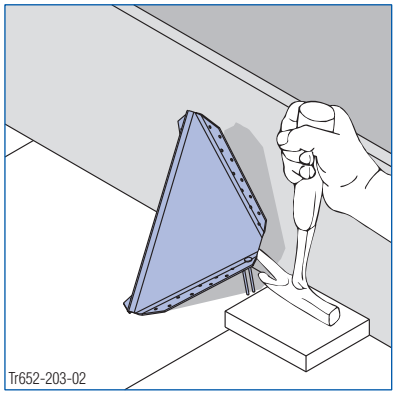
Configuration A: Fastened with nails



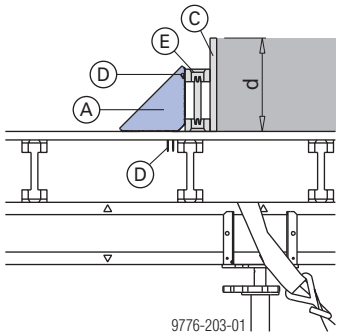
d ... slab thickness max. 30 cm

A	Universal end-shutter support 30cm
B	Nail 3.1x80
C	Doka formwork sheet 3-SO

Tip for stripping formwork:
➤ Take out the nails on the stop-end side.
➤ Put the claw of a hammer under the corner (put a piece of wood under it to protect the formwork sheeting)
➤ Lever up the end-shutter support



Configuration B: Fastened with Spax screws

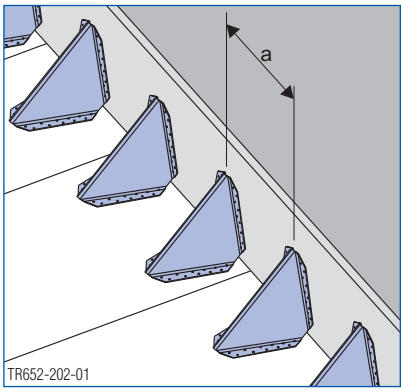


d ... slab thickness max. 30 cm

A	Universal end-shutter support 30cm
C	Doka formwork sheet 3-SO
D	Spax screws 4x40 (fully threaded)
E	Doka beam H20

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 end-shutter support – is allowed.

Structural design



		Max. influence width: a for slab thickness of [cm]		
How fastened:	Configuration	20	25	30
4 nails 3.1x80	A	90	50	30
4 Spax screws 4x40 (fully threaded)	B	220	190	160

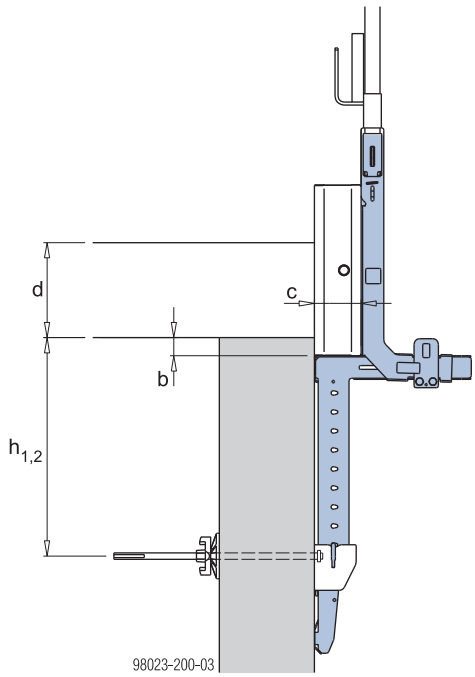
Doka floor end-shutter clamp

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 dismounted from either above or below when the End-shutter shoe is used
- Low unit weight (can be separated into 2 parts)

Follow the directions in the 'Doka floor end-shutter clamp' User Information booklet!

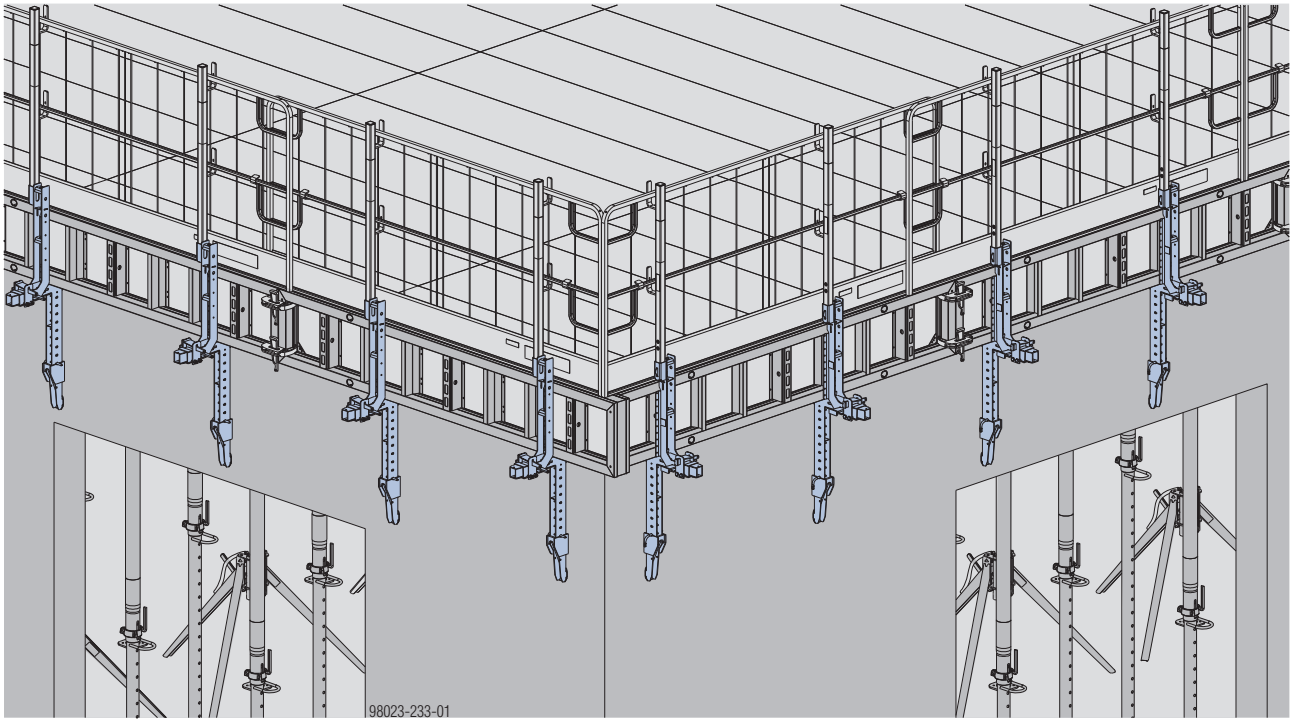
System dimensions



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.

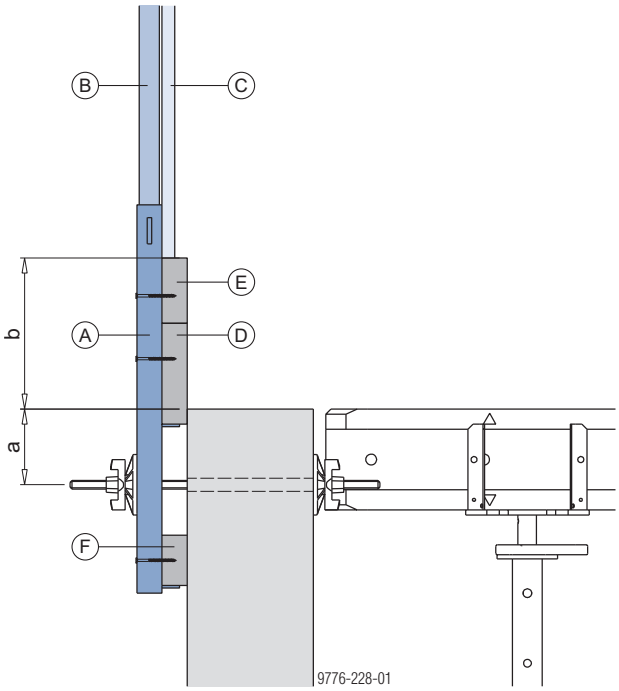
Floor end-shutter profile XP

The Floor end-shutter profile XP is used for fast, safe forming of slab stop-ends.

- For slab thicknesses of up to 30 cm
- Can be combined with Edge protection XP.
- Various stop-ends (planks or formwork sheets) possible.
- Fits all standard Doka handrail posts (also complies with the requirements of DIN EN 13374)

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

System dimensions

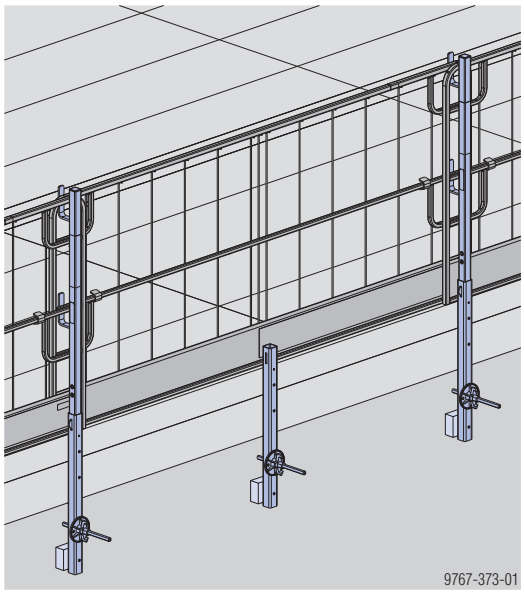


a ... 15.0 cm
b ... slab thickness max. 30 cm

A	Floor end-shutter profile XP
B	Handrail post XP 1.20m
C	Protective grating XP
D	End-shuttering (5x20cm board)
E	End-shuttering (5x13cm cm board)
F	Spacer board (5x10cm)

- Slab stop-ends and safety barriers in one system

Practical example

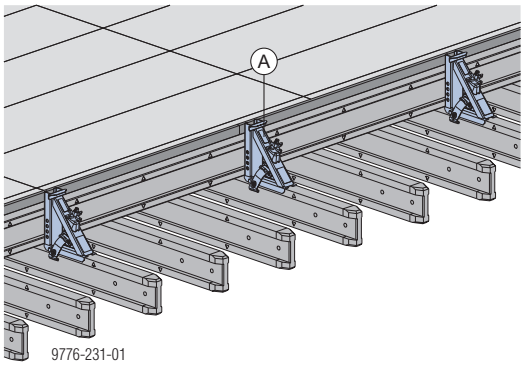


Beam forming support

The Beam forming support 20 is the professional way of forming drop beams and slab stop-ends. In conjunction with the Extension for beam forming support 60cm, exact height adjustment to within 1 cm is possible.

- For slab thicknesses of up to 90 cm
- Secured directly to the secondary beam

For detailed information, see the section headed Drop beams.



A	Beam forming support 20

Guardrail systems on the formwork

NOTICE

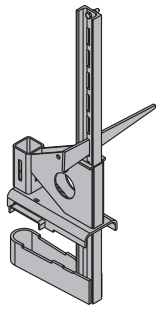
- Working from below is the preferred method for installing fall protection.
- When mounting/dismounting edge protection from above, the crew must use a personal fall-arrest system (e.g. safety harness).
- Suitable anchorage points must be defined by an approved person appointed by the contractor.

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

Railing clamp XP 40cm

The Railing clamp XP 40cm is for clamping the Handrail post XP to the end face of concrete floor-slabs or to Doka beams.

- for railing heights of 1.20 m
- for railing heights 1.80 m with additional measures



Clamping range: 2 - 43 cm

WARNING

➤ Only clamp the Railing clamp XP 40cm to components that can reliably transfer the forces involved!

WARNING

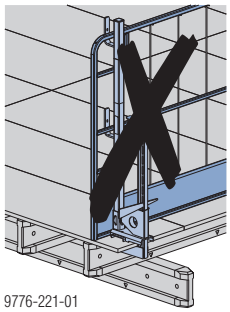
Risk of formwork beams tipping over!

➤ Only attach the Railing clamp XP 40cm to formwork beams if there is no risk of these tipping over.

WARNING

Risk of breaking the formwork sheets!

➤ It is forbidden to fasten the clamp to the formwork sheeting only.



9776-221-01

Railing-height 1.20 m

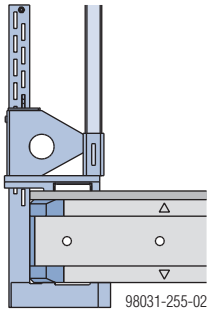
Assembly

NOTICE

The railing clamp can be installed either in parallel with or transverse to the beam direction. **Do not install the railing clamp at an angle!**

➤ To adjust the clamping range of the Railing clamp XP 40cm, first take the wedge out of the wedge-slot.

➤ Push the Railing clamp XP 40cm onto the Doka beam until it is pressed against the end face of the floor-slab.



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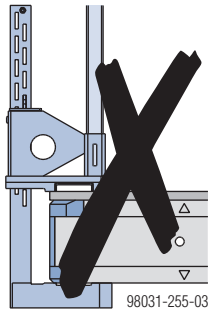

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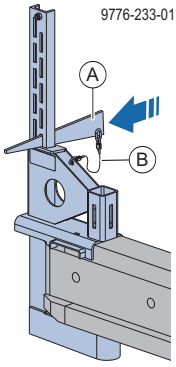
NOTICE

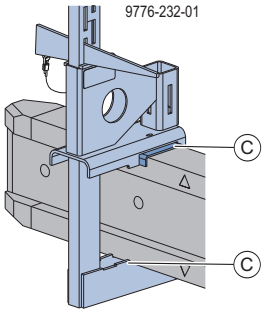
When installing the wedge **(A)** in the wedge slot, note the position of the securing cable **(B)** !



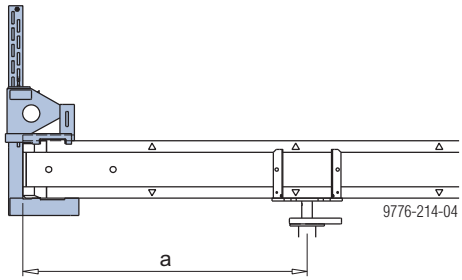
➤ Hammer in the wedge until the hammer rebounds.

NOTICE

When Railing clamp XP is installed at right angles to the beam, the beam must be securely seated in the recesses **(C)** of the railing clamp XP.



➤ Position the fully pre-assembled beams as primary beams or secondary beams, as applicable.



a ... max. cantilever length of Doka beam H20 3.90m: 109.0 cm

NOTICE

- Secure cantilevering beams to prevent lift-out and tipover.
- The superstructure has to be completed before the remaining steps in the railing assembly procedure are carried out.

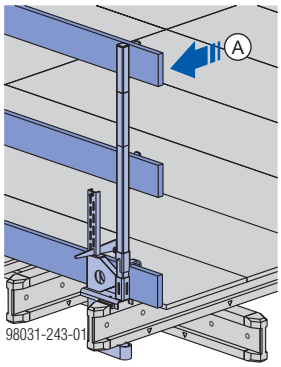
➤ Working from below, push the Toeboard holder XP onto the Handrail post XP (not needed when using the Protective grating XP).

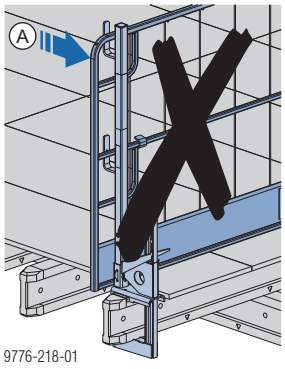
➤ Push the Handrail post XP into the post holder of the Railing clamp XP 40cm until the locking mechanism engages (= 'Easy-Click' function).

The locking mechanism must engage.

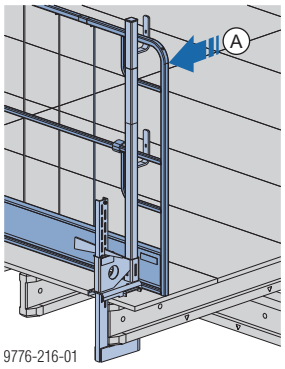
➤ Fit on a Protective grating XP or guardrail boards, and fix them in place.

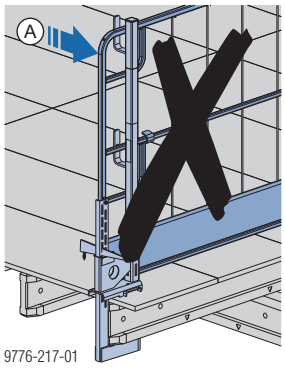
Fixing in the direction of the secondary beams





Not possible for use with Protective grating XP.

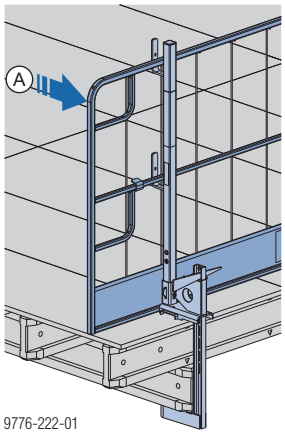


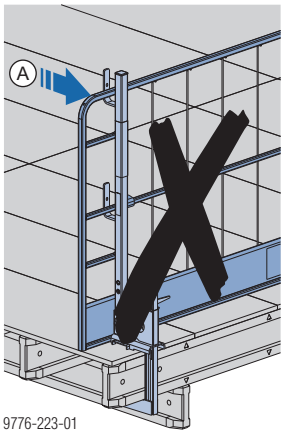


Can be mounted to formwork beam either with or without formwork sheet.

A Load action

Fixing in the direction of the primary beams

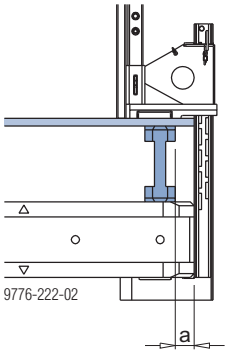




Only allowed to be mounted to formwork beams to which formwork sheeting is attached.

Usual on-site nailing of the formwork sheet: 1 nail/0.5 m²

A Load action



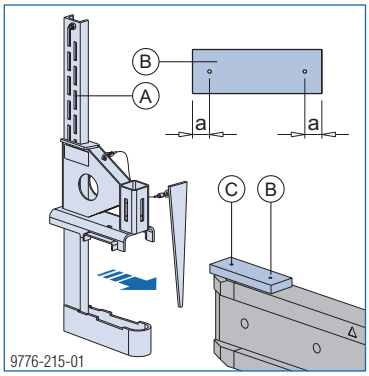
a ... Protruding length of formwork sheet ≤ 5 cm

Railing-height 1.80 m

For railing height 1.80m, also proceed in accordance with the instructions below when using the Railing clamp XP.

NOTICE

Insertion of a hardwood packer on top of the Doka beam H20 is absolutely essential for safe transfer of the loads.

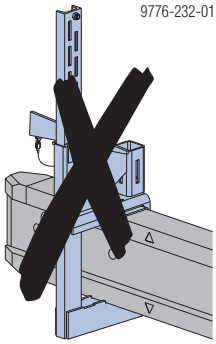


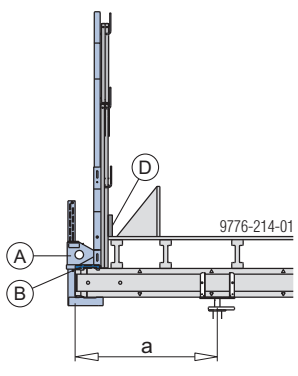
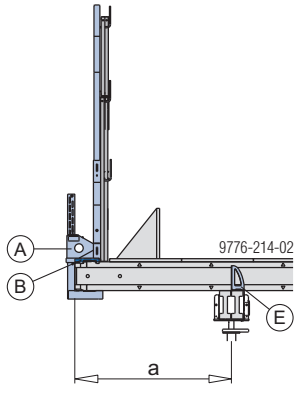
a ... 2.5 cm

A Railing clamp XP 40cm
B Hardwood packer 65x20x190 mm
C Universal screw countersunk head Torx TG 5x80

WARNING

➤ Installation at right angles to the beam is prohibited when the railing height is 1.80 m.



Use on the primary beam	Use on the secondary beam
	

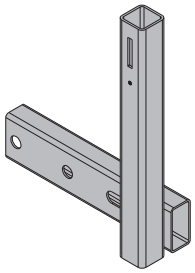
a ... max. cantilever length of Doka beam H20 3.90m: 109.0 cm

A Railing clamp XP 40cm
B Hardwood packer 65x20x190 mm (only for railing height 1.80m)
D Toeboard (plank 150mm), site-provided
E Secondary-beam stabilisers

Insertion adapter XP

Insertion adapters XP are used in combination with Protective gratings XP, guardrail boards or scaffold tubes, for putting up safety barriers.

- Suitable for railing-heights of 1.20 m and 1.80 m.



WARNING

➤ Only fix the Insertion adapter XP to components that can reliably transfer the forces involved.

WARNING

Risk of formwork beams tipping over!

➤ Only attach the Insertion adapter XP to formwork beams if there is no risk of these tipping over.

Assembly

➤ Mount the Insertion adapter XP in the ready-drilled holes in the beam.
(Can be used on both primary and secondary beams)

Threaded-fastener material required:

- 2 hexagon bolts ISO 4014 M20x90 8.8 galv.
- 2 hexagon nuts ISO 4032 M20 8 galv.
- 2 washers ISO 7094 20 St-100 HV galv. (on wood side)

➤ Position the fully pre-assembled beam as primary beam or secondary beam, as applicable.

NOTICE

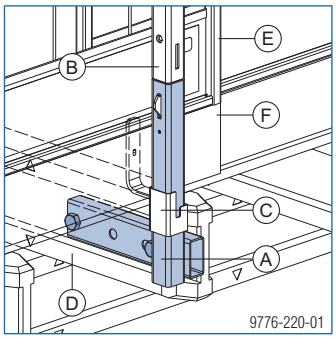
- Secure cantilevering beams to prevent lift-out and tipover.
- The superstructure has to be completed before the remaining steps in the railing assembly procedure are carried out.

➤ Working from below, push the Toeboard holder XP onto the Handrail post XP (not needed when using the Protective grating XP).

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

The locking mechanism must engage.

➤ Fit on a Protective grating XP or guard-rail boards, and fix them in place.



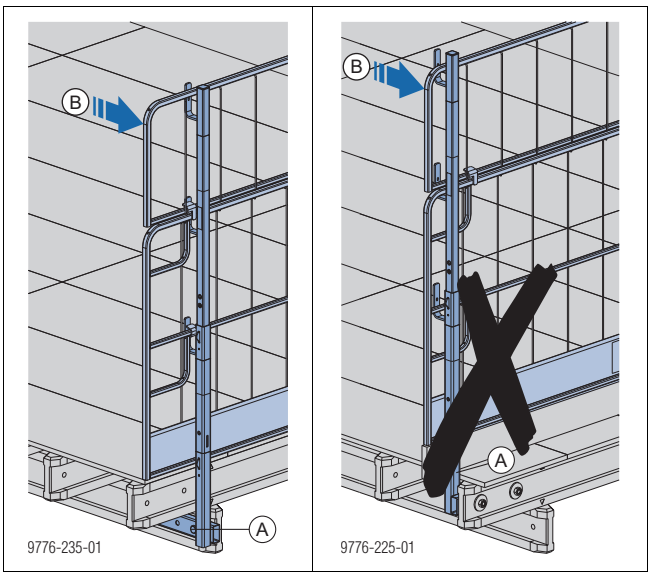
A	Insertion adapter XP
B	Handrail post XP 0.60m or Handrail post XP 1.80m
C	Toeboard holder XP 0.60m (not needed when using the Protective grating XP)
D	Doka beam H20
E	Protective grating or guardrail boards (site-provided)
F	extra toeboard (wooden board 3x15 cm or 4x15 cm)

WARNING

Make sure the loading direction is correct!

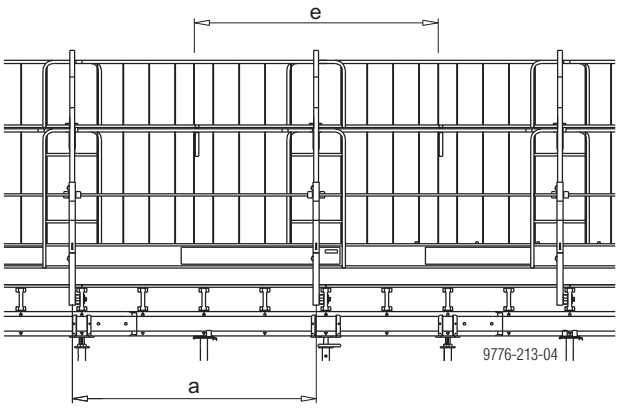
➤ Subject the Insertion adapter XP to loading **in its longitudinal direction only**.

➤ Subjection to loading **in its transverse direction is prohibited!**



A	Insertion adapter XP
B	Load action

Structural design



a ... span
e ... influence width

NOTICE

A fundamental distinction must be made between the span (a) and the influence width (e):

- The span is the distance between the handrail posts.
- The permitted influence width of a handrail post is stated in the respective tables.
- The actual influence width can only be determined by calculation, and corresponds to roughly the spacing 'a' between the handrail posts.

- The span (a) of the handrail posts is roughly equal to the influence width (e) if
  - they are evenly spaced
  - the guardrail boards are either continuous or are jointed at the handrail posts, and
  - there are no cantilevering projections.
- The wind conditions likely to be encountered in Europe for a height up to 40m above ground level are covered by the peak velocity pressure q = 0.6 kN/m².

Note:

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

Observe all national regulations applying to deck and guardrail boards.

Permitted cantilever (b) of edge-protection components

Edge-protection component	Permitted cantilever			
	Peak velocity pressure q [kN/m²]			
	0.2	0.6	1.1	1.3
Protective grating XP 2.70x1.20m	0.6 m	0.6 m	0.4 m	0.1 m
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			

Railing clamp XP 40cm

used in combination with Handrail post XP 1.20m

Used in direction of either secondary or primary beams

Peak velocity pressure q [kN/m²]	Permissible influence width 'e' [m]			
	Protective grating XP 2.70x1.20m	Guardrail boards		
		3 x 15cm	4 x 15cm	Scaffold tubes 48.3mm [1]
0.2	2.5	2.0	2.0	5.0
0.6		2.0	2.0	5.0
1.1		—	—	3.5
1.3	2.2	—	—	2.9

[1] with toeboard 5 x 20 cm

used in combination with Handrail post XP 1.20m and 0.60m or Handrail post XP 1.80m

Used in direction of either secondary or primary beams

Peak velocity pressure q [kN/m²]	Permissible influence width 'e' [m]	
	Protective gratings XP 2.70x1.20m and 2.70x0.60m	Scaffold tubes 48.3mm
0.2	2.0	2.0
0.6	2.0	2.0
1.1	—	—
1.3	—	—

Insertion adapter XP

used in combination with Handrail post XP 1.20m and 0.60m or Handrail post XP 1.80m

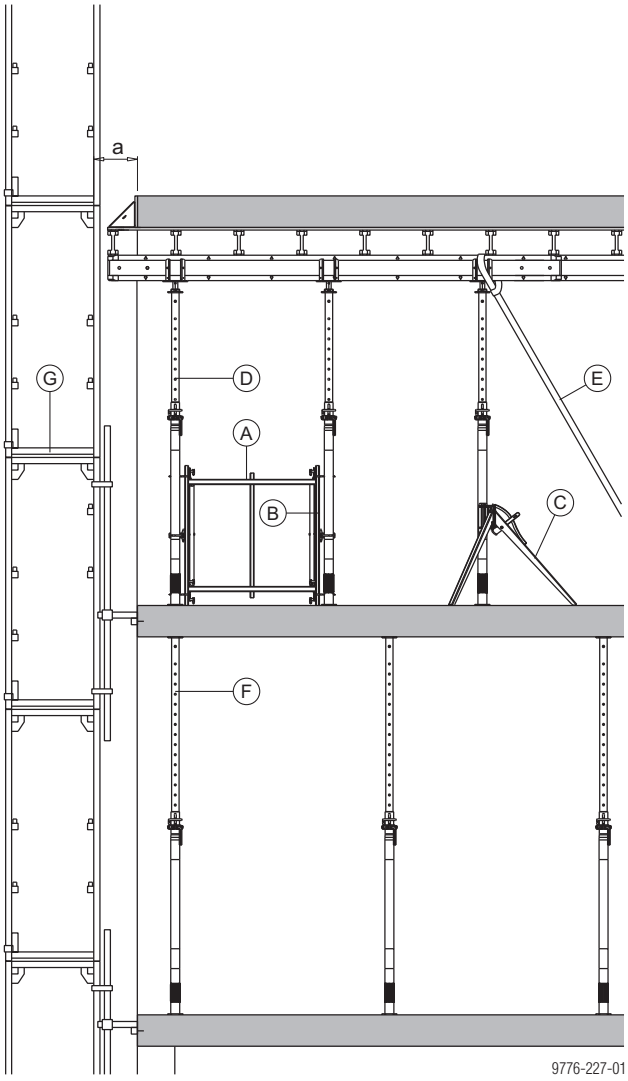
Used in direction of either secondary or primary beams

Peak velocity pressure q [kN/m²]	Permissible influence width 'e' [m]				
	Protective gratings XP 2.70x1.20m [1] and 2.70x0.60m	Guardrail boards			
		2.4 x 15cm	3 x 15cm	4 x 15cm	Scaffold tubes 48.3mm [2]
0.2	2.5	1.9	2.7	3.6	5.0
0.6		1.9	2.7	2.7	5.0
1.1		1.5	1.5	1.5	2.8
1.3		1.2	1.2	1.2	2.4

[1] ... Additional toeboard (wooden board 3 x 15 cm or 4 x 15 cm) required in some cases.

[2] ... Toeboard 5 x 43 cm required (e.g. wooden board 5 x 20 cm + 5 x 23 cm).

Edge protection with façade scaffolding



a ... max. 30 cm

A	Bracing frame Eurex 1.00m
B	Diagonal cross
C	Removable folding tripod top
D	Doka floor prop Eurex
E	Lashing strap 5.00m
F	Reshoring props (only when necessary)
G	Facade scaffolding

NOTICE

- In order to be able to transfer the horizontal forces, the superstructure components must be firmly attached to the structure with a rigid, force-transmitting join.
- The tie-down can be fastened to either the secondary or primary beam.

Fall protection on the structure

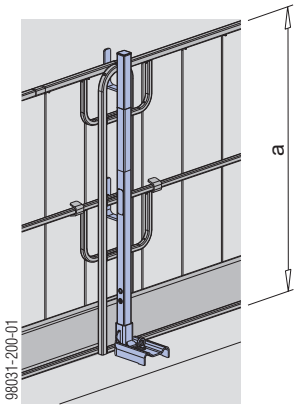
Doka floor end-shutter clamp

- Slab stop-ends and fall-arrest barriers in one system

Follow the directions in the 'Doka floor end-shutter clamp' User Information booklet!

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

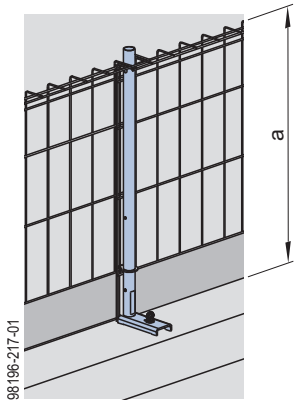


a ... > 1.00 m

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

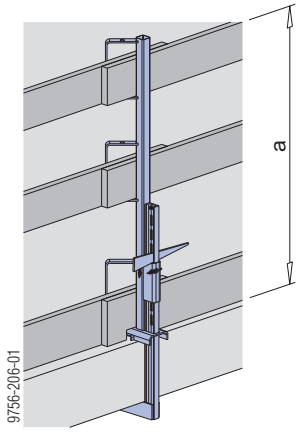


a ... > 1.17 m

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

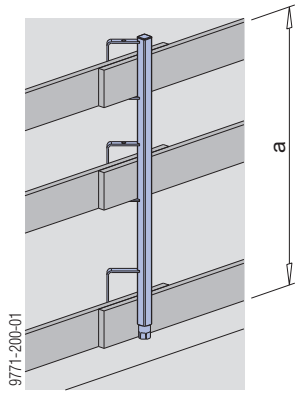


a ... > 1.00 m

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



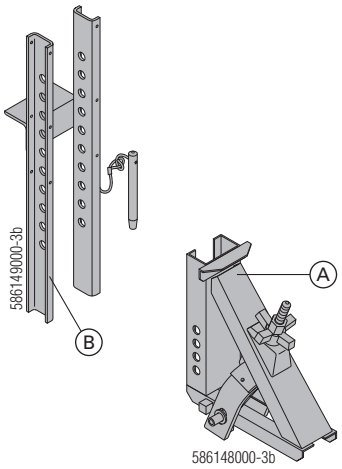
a ... > 1.00 m

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

Drop beams

Beam forming support

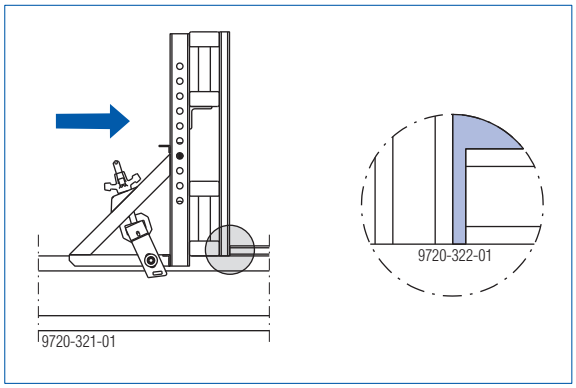
The Beam forming support 20 is the professional way of forming drop beams and slab stop-ends. In conjunction with the Extension for beam forming support 60cm, exact height adjustment to within 1 cm is possible. This does away with time-consuming jobsite squared-timber constructions. The Beam forming support automatically clamps the formwork tight, resulting in clean concrete surfaces and grout-tight edges.



A Beam forming support 20
B Extension for beam forming support 60cm

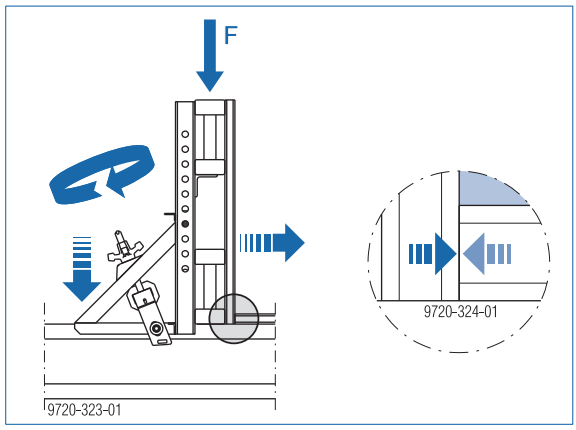
How to use the Beam forming support

➤ Place the beam-forming support onto the H 20 secondary beam and push it up against the sidewall formwork.



The large bearing surface of the beam forming support gives the sidewall formwork a high degree of (90°) angle accuracy.

➤ Clamp the beam forming support firmly into position



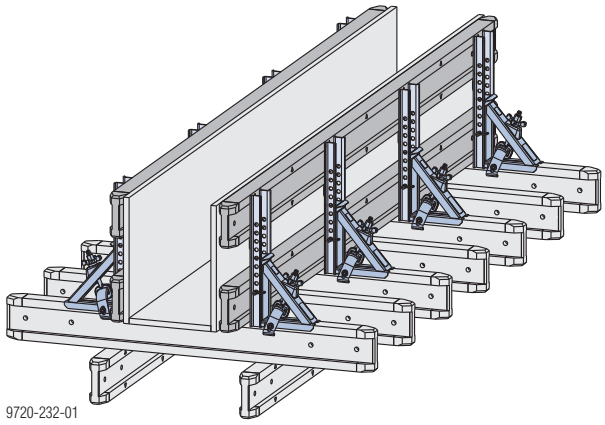
F ... 8 kN

The diagonal bracing of the beam forming support ensures that the joint between the form-ply sheets is **automatically pressed together tightly** when the beam forming support is clamped.

This results in a **clean concrete surface**.

Formwork beams horizontal

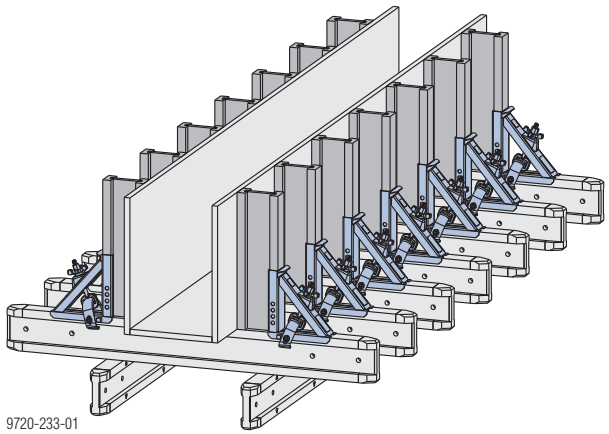
(up to a height of 60 cm)



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 specific applications shown here, using the Beam forming support, are permitted.

Formwork beams vertical

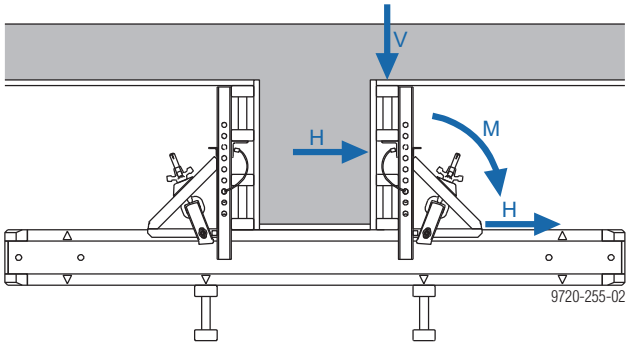
(up to a height of 90 cm)



Structural design

Vertical load and horizontal load

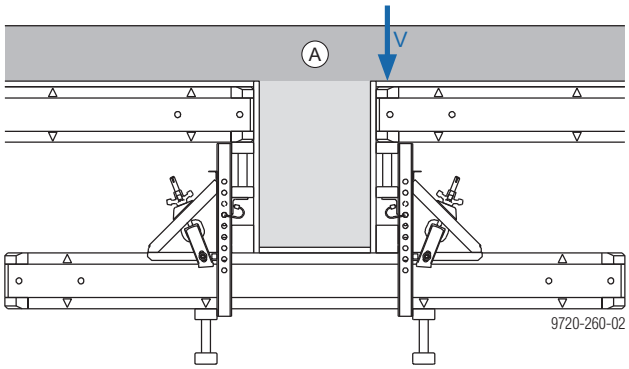
When drop beam and slab are poured at the same time, the vertical loads and the horizontal loads act concurrently.



- Permitted vertical load: 3.0 kN
- Permitted horizontal load: 4.5 kN
- Permitted bending moment: 1.1 kNm

Vertical load

If the floor-slab is not poured until the concrete of the drop beam has hardened, only the vertical loads act.



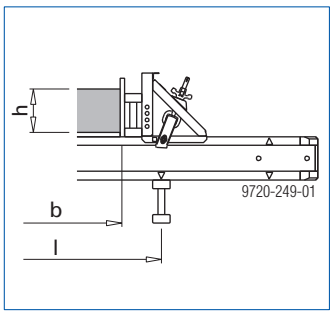
A Fresh concrete

Permitted vertical load: 8.0 kN

Drop-beam not integrated into the floor-slab / stop-end formwork

All the data below apply where 3-SO 21 mm and 3-SO 27 mm formwork sheets are used.

Drop beams of between 10 and 30 cm in height



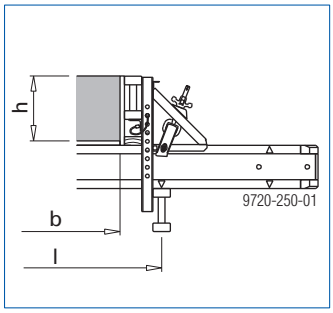
b ... max. 100 cm
l ... max. 150 cm

Sidewall formwork:

- Doka beam H20 top

Spacing of secondary beams	Position of Beam forming support
50.0 cm	On every 3rd secondary beam

Drop beams of between 30 and 47 cm in height



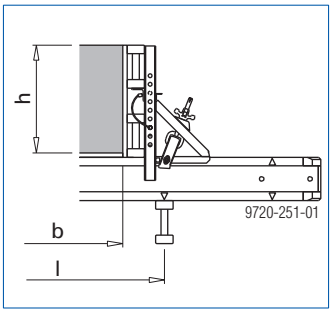
b ... max. 100 cm
l ... max. 150 cm

Side formwork:

- Doka beam H20 top
- Squared timber 4/8 cm for drop beams of between 30 and 34 cm in height
- Squared timber 8/8 cm for drop beams of between 34 and 47 cm in height

Spacing of second-ary beams	Position of Beam forming support
50.0 cm	on every other secondary beam

Drop beams of between 47 and 70 cm in height



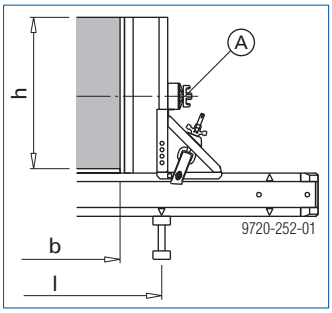
b ... max. 100 cm
l ... max. 150 cm

Sidewall formwork:

- 2 Doka beams H20 top

h	Spacing of secondary beams	Position of Beam forming support
Up to 60 cm	50.0 cm	On every 2nd secondary beam
From 60 cm	33.3 cm	On every 2nd secondary beam

Drop beams of between 70 and 90 cm in height



b ... max. 100 cm
l ... max. 150 cm

Where the dimensional requirements are especially stringent, we recommend placing a form-tie **(A)** through the sidewall formwork as an additional precaution.

Sidewall formwork:

- Doka formwork beams H20 in the upright

h	Spacing of secondary beams	Position of Beam forming support
Up to 85 cm	41.7 cm	On every secondary beam
From 85 cm	36.0 cm	On every secondary beam

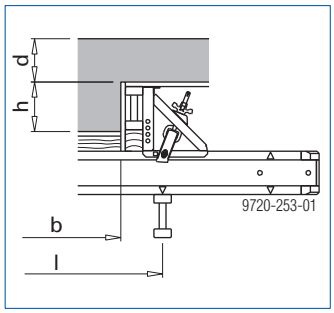
h... Drop-beam height
b... Drop-beam width
l... Spacing of primary beams

Drop-beam integrated into the floor-slab

Secondary beams parallel to drop-beam

All the data below apply where 3-SO 21 mm and 3-SO 27 mm formwork sheets are used.

Drop beams of between 10 and 30 cm in height



b ... max. 100 cm
l ... max. 150 cm

Base formwork

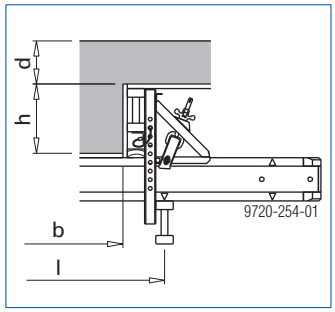
- Height of squared timber = 30-h (cm)

Sidewall formwork:

- Doka beam H20 top
- Squared timber 10/8 cm

Slab thickness d	Spacing of secondary beams	Position of Beam forming support
20 cm 30 cm	62.5 cm 41.7 cm	On every 2nd secondary beam On every 3rd secondary beam

Drop beams of between 30 and 47 cm in height



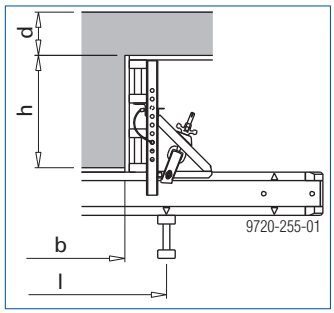
b ... max. 100 cm
l ... max. 150 cm

Side formwork:

- Doka beam H20 top
- Squared timber 4/8 cm for drop beams of between 30 and 34 cm in height
- Squared timber 8/8 cm for drop beams of between 34 and 47 cm in height

Slab thickness 'd'	Spacing of secondary beams	Position of Beam forming support
20 cm 30 cm	41.7 cm 33.3 cm	on every other secondary beam on every other secondary beam

Drop beams of between 47 and 60 cm in height



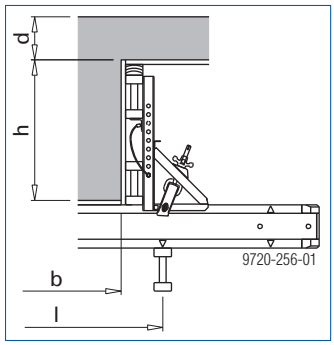
b ... max. 100 cm
l ... max. 150 cm

Sidewall formwork:

- 2 Doka beams H20 top

Slab thickness d	Spacing of secondary beams	Position of Beam forming support
20 cm 30 cm	31.25 cm 25.00 cm	On every 2nd secondary beam On every 2nd secondary beam

Drop beams of between 60 and 70 cm in height



b ... max. 100 cm
l ... max. 150 cm

Sidewall formwork:

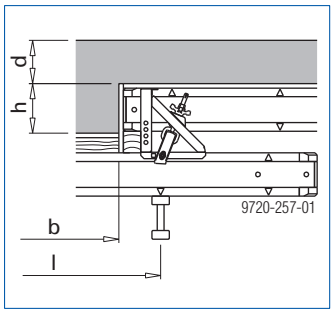
- 2 Doka beams H20 top
- Height of squared timber = h-60 (cm)

Slab thickness d	Spacing of secondary beams	Position of Beam forming support
20 cm 30 cm	40.0 cm -	On every secondary beam -

Secondary beams perpendicular to drop-beam

All the data below apply where 3-SO 21 mm and 3-SO 27 mm formwork sheets are used.
Floor influence zone on either side of the drop-beam max. 1.0 m

Drop beams of between 10 and 30 cm in height



b ... max. 100 cm
l ... max. 150 cm

Base formwork

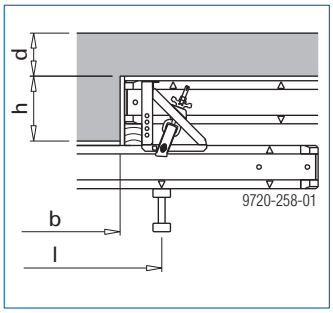
- Height of squared timber = 30-h (cm)

Sidewall formwork:

- Doka beam H20 top
- Squared timber 10/8 cm

Slab thickness d	Spacing of secondary beams	Position of Beam forming support
20 cm 30 cm	62.5 cm 41.7 cm	On every 2nd secondary beam On every 3rd secondary beam

Drop beams of between 30 and 40 cm in height



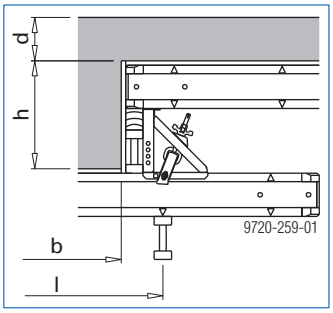
b ... max. 100 cm
l ... max. 150 cm

Sidewall formwork:

- Doka beam H20 top
- Height of squared timber = h-20 (cm)

Slab thickness d	Spacing of secondary beams	Position of Beam forming support
20 cm 30 cm	50.0 cm 41.7 cm	On every 2nd secondary beam On every 2nd secondary beam

Drop beams of between 40 and 51 cm in height



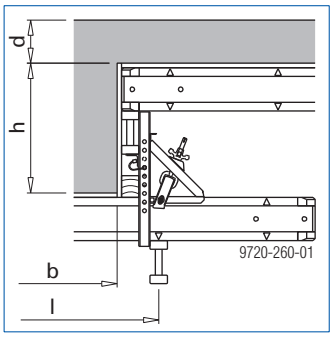
b ... max. 100 cm
l ... max. 150 cm

Sidewall formwork:

- Doka beam H20 top
- Height of squared timber = h-40 (cm)

Slab thickness d	Spacing of secondary beams	Position of Beam forming support
20 cm 30 cm	41.70 cm 31.25 cm	On every 2nd secondary beam On every 2nd secondary beam

Drop beams of between 51 and 70 cm in height



b ... max. 100 cm
l ... max. 150 cm

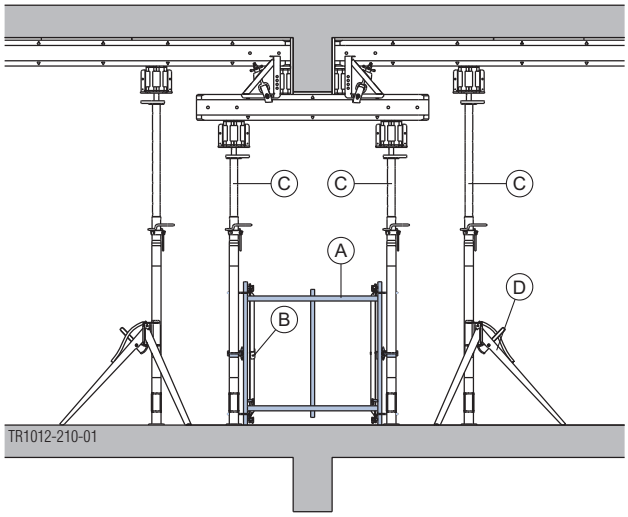
Sidewall formwork:

- Doka beam H20 top
- Squared timber 5/8 cm for drop beams of between 51 and 60 cm in height
- Squared timber 10/8 cm for drop beams of between 60 and 70 cm in height

Slab thickness d	Spacing of secondary beams	Position of Beam forming support
20 cm 30 cm	40.0 cm -	On every secondary beam -

h... Drop-beam height
b... Drop-beam width
l... Spacing of primary beams

Downstand beam in mid-slab



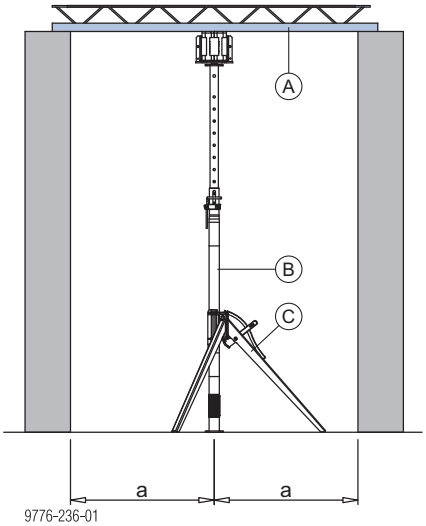
A Bracing frame Eurex
B Diagonal cross
C Doka floor prop Eurex
D Removable folding tripod top

NOTICE

Where necessary, the stability of the shoring construction during assembly can be increased by attaching crosswise tie-downs.

Propping for precast sectional slabs

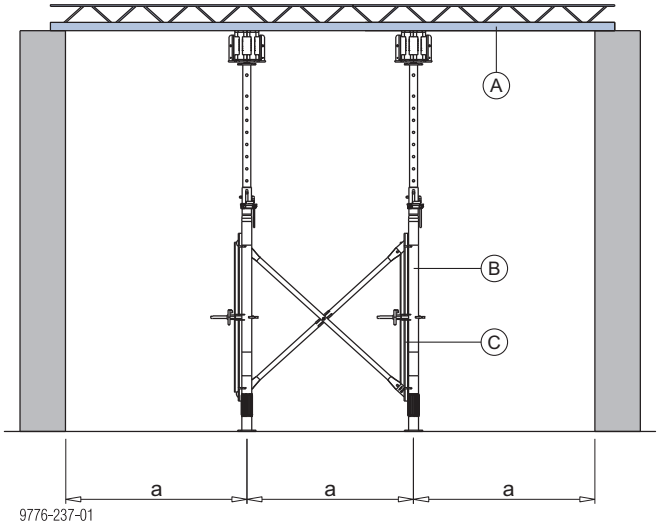
Propping with one primary beam



a ... Obtain information about spacing from the manufacturer.

A	Precast sectional slab
B	Floor prop + primary beam
C	e.g. Removable folding tripod

Propping with 2 primary beams



a ... Obtain information about spacing from the manufacturer.

A	Precast sectional slab
B	Floor prop + primary beam
C	e.g. Bracing frame or Removable folding tripods

NOTICE

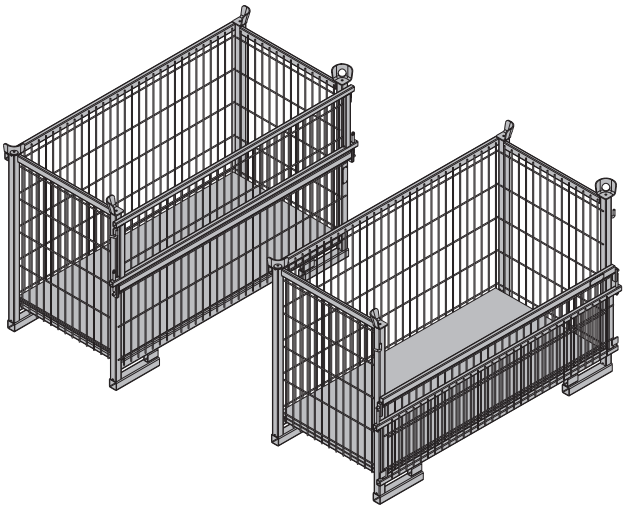
Structural design and assembly are the same as for the primary beam plane. Note the continuous-beam effect of the precast sectional slab and resulting higher primary-beam loads!

General

Transporting, stacking and storing

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

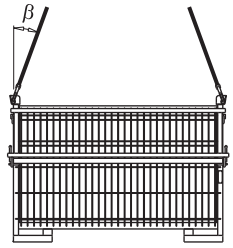
Outdoors (on the site) Floor gradients up to 3%	Indoors Floor gradients up to 1%
2	5
It is not allowed to stack empty pallets on top of one another!	

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

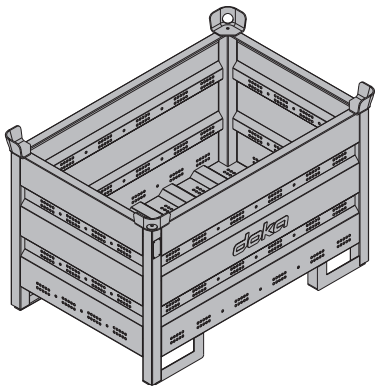
Repositioning by forklift truck or pallet stacking truck

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

Doka multi-trip transport box

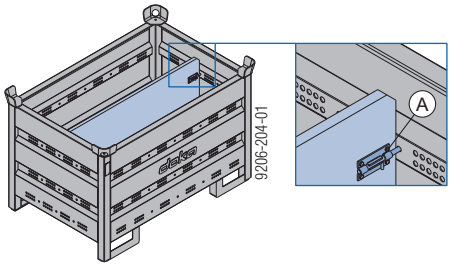
Storage and transport device for small items

Doka multi-trip transport box 1.20x0.80m



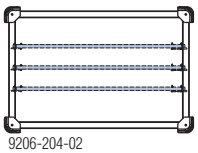
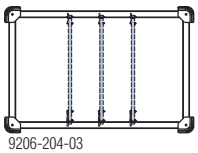
Permitted load-bearing capacity: 1500 kg (3300 lbs)
Permitted imposed stacking load: 7850 kg (17300 lbs)

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**.

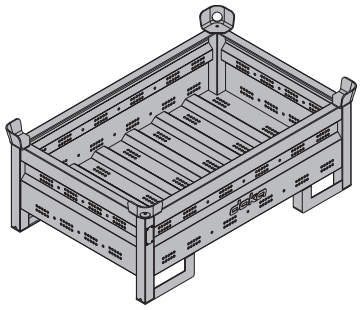


A Slide-bolt for fixing the partition

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

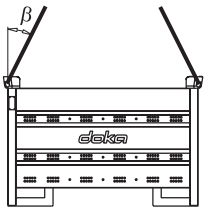
Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

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°!



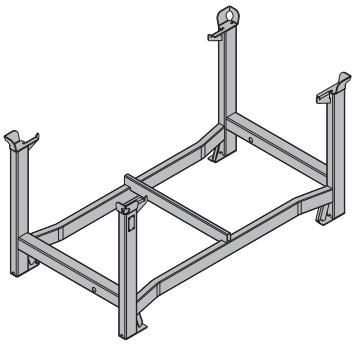
9206-202-01

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. n° 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 pallets on top of one another!	

NOTICE

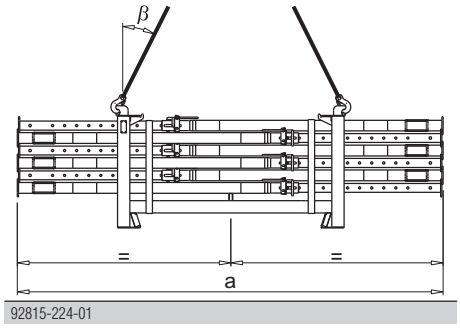
- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.
- **How to use with Bolt-on castor set B:**
  - Always apply the fixing brake when the container is 'parked'.
  - When Doka stacking pallets are stacked, the bottom pallet must NOT be one with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

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.

Transporting Bracing frames Eurex

NOTICE

Stack only bracing frames of the same size on any one stacking pallet!

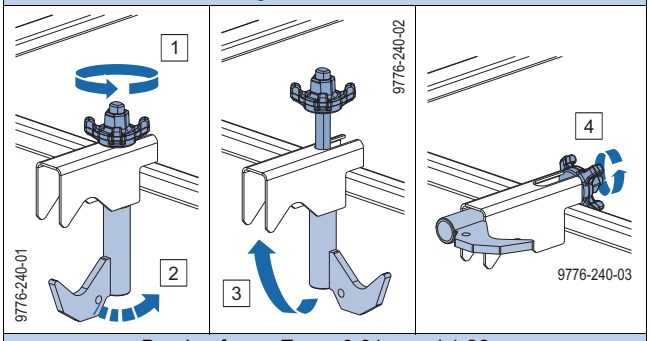
Load quantities

Bracing frame Eurex	Doka stacking pallet	Units
0.81m	1.20x0.80m	10
1.00m	1.55x0.85m	
1.22m	1.55x0.85m	

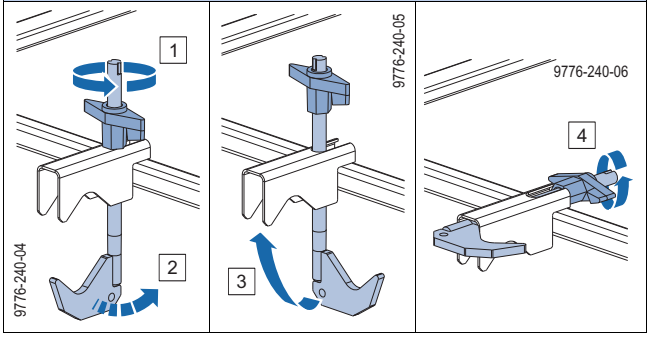
Loading the pallet:

➤ Turn prop holders (= quick-fixing mechanisms) 90° and secure in parked position.

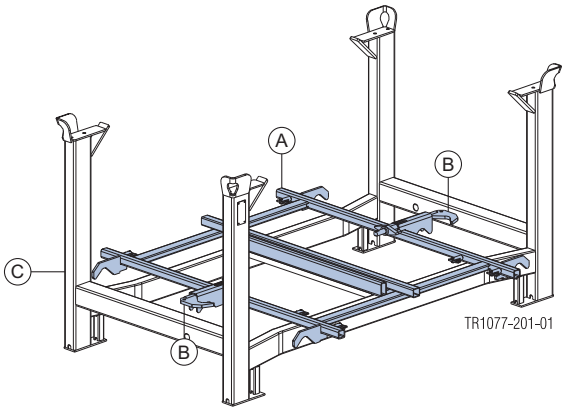
Bracing frame Eurex 1.00m



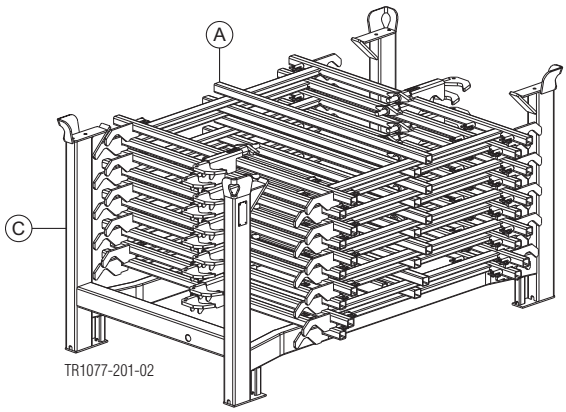
Bracing frame Eurex 0.81m and 1.22m

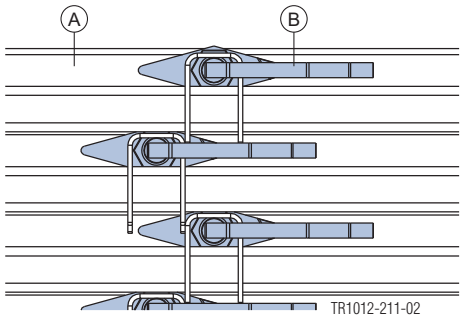


➤ Lay bracing frame in the stacking pallet.



➤ Stack the other bracing frames alternate ways round.





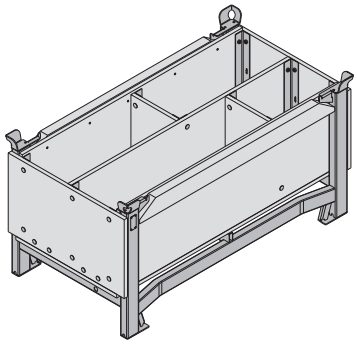
A Bracing frame Eurex
B Prop-holder (= quick-fixing mechanism)
C Doka stacking pallet

➤ Fasten the load to the stacking pallet so that it cannot slide or tip out.

Animation:
https://player.vimeo.com/video/262344460

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. n° 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 pallets on top of one another!	

NOTICE

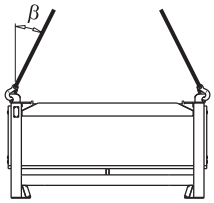
- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.
- **How to use with Bolt-on castor set B:**
  - Always apply the fixing brake when the container is 'parked'.
  - When Doka stacking pallets are stacked, the bottom pallet must NOT be one with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

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°!



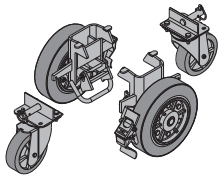
92816-206-01

Repositioning by forklift truck or pallet stacking truck

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

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.



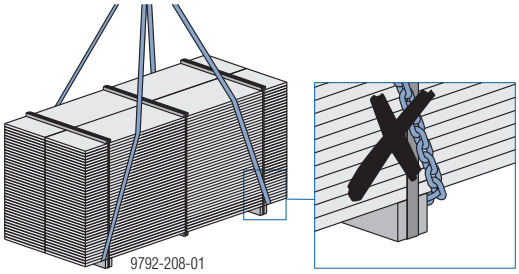
The Bolt-on castor set B can be mounted to the following multi-trip packaging items:

- Doka accessory box
- Doka stacking pallets
- Protective barrier Z pallets

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

Transporting formwork sheets

- Always use slings for lifting stacked sheets - do not use chains.
- Always use edge protectors when strapping sheets together. Edge protectors can be padding made of plastic, wood or cardboard.



NOTICE

When transporting loose sheets without strapping, make sure that the sheets cannot slip!

Sheet stack

NOTICE

- Cover the sheet stack to protect the sheets against extremes of weather, for example direct sunlight or moisture. This reduces the tendency of cracks to form in the face ply.
- Do not attempt to place stacks of sheets one on top of another on the construction site.

➤ Always use edge protectors when strapping sheets together. Edge protectors can be padding made of plastic, cardboard or wood.

Stack units ex works

	Sheets per stack	
Dimensions	21 mm	27 mm
100/50 cm - 300/50 cm	100	80
350/50 cm - 600/50 cm	60	50
100/100 cm - 300/100 cm	50	40
350/100 cm - 600/100 cm	30	25

Stack strapped complete with wooden battens 8 x 8 cm

Ground conditions for stacking

- Maximum angle of inclination of ground 3%.
- The ground on which the stack is to be placed must be adequately firm and level. Best-case conditions are concreted or paved storage areas.
- Storage on asphalt:
  Depending on the parts stored, place wooden battens, strips of formwork sheeting or metal sheet between the parts and the asphalt surface to ensure that the weight is adequately spread.
- Storage on other surfaces (sand, gravel...):
  Adopt suitable measures for storage (e.g. place thick plywood sheets underneath the loads).

Reshoring props, concrete technology and stripping out

Follow the directions in the Calculation Guide entitled 'Stripping out formwork from floors in building construction', and/or ask your Doka technician.

When is the best time to strip out the formwork?

The concrete strength needed before the formwork can be stripped out will depend upon the load factor α. This can be read off from the following table.

Load factor α

This is calculated by:

$$\alpha = \frac{DL_{concrete} + LL_{construction\ state}}{DL_{concrete} + DL_{finishing} + LL_{final\ state}}$$

Slab thickness 'd' [m]	Dead load $DL_{concrete}$ [kN/m²]	Load factor α $LL_{final\ state}$ 2.00 kN/m²	3.00 kN/m²	4.00 kN/m²	5.00 kN/m²
0.14	3.50	0.67	0.59	0.53	0.48
0.16	4.00	0.69	0.61	0.55	0.50
0.18	4.50	0.71	0.63	0.57	0.52
0.20	5.00	0.72	0.65	0.59	0.54
0.22	5.50	0.74	0.67	0.61	0.56
0.25	6.25	0.76	0.69	0.63	0.58
0.30	7.50	0.78	0.72	0.67	0.62
0.35	8.75	0.80	0.75	0.69	0.65

Valid for a finishing-load $DL_{finishing}$ = 2.00 kN/m² and a live load in the early-stripped state of $LL_{construction\ state}$ = 1.50 kN/m²

$DL_{concrete}$: calculated with $\gamma_{concrete}$ = 25 kN/m³
$DL_{finishing}$: load for floor finish, etc.

Example: Slab thickness 0.20 m with a final live load of 5.00 kN/m² results in a load factor α of 0.54.

This means that formwork removal / stress-release can take place once the concrete has reached 54% of its 28-day strength. The load-bearing capacity will then correspond to that of the finished structure.

NOTICE

If the floor props are not stress-relieved, meaning that the floor-slab has not been activated, then the props will remain loaded with the dead weight of the floor-slab.

When the floor above is concreted, this may lead to a doubling of the load that is being applied to the floor props.

The floor props are not designed to cope with such an overload, and the result may be damage to the formwork, the floor props and the structure.

Why put up reshoring props after stripping out the formwork?

After the formwork has been stripped and the floor-slab has been stress-relieved or dismantled, the floor-slab is able to bear its dead load and live loads resulting from the construction state, but not the concreting loads from subsequent floor-slabs.

The temporary reshoring serves to support the floor-slab and distribute the concreting loads across several floors.

Positioning the reshoring props correctly

Reshoring props have the job of spreading loads between the new floor-slab and the floor beneath it. The load distribution will depend on the relationship between these two floor-slabs and their rigidity.

NOTICE

Ask an expert!

As a rule, the question of using reshoring props should be referred to the responsible experts (e.g. structural engineers), regardless of the information given above.

Observe all local standards and regulations!

The **Floor prop spring clamp** provides extra stability of the floor prop.

- This accessory reduces the risk of the floor prop tipping over when the load on it is relieved in the course of construction work.

➤ The spring clamp is designed to be pushed into the top end of the inner tube of the floor prop.

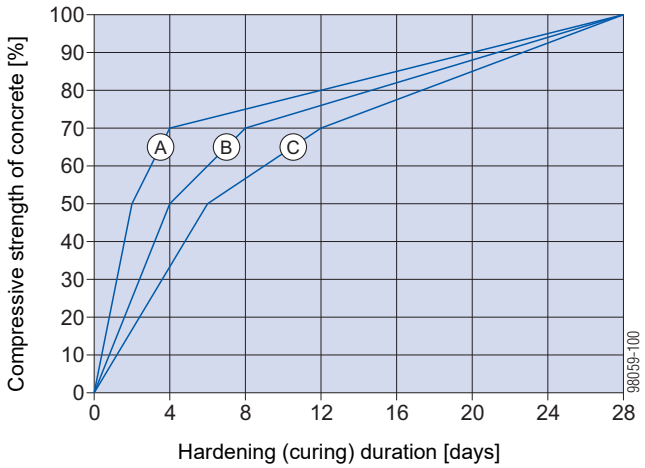
Strength development in the new concrete

Rough reference values can be found in DIN 1045-3:2008, Table 2. The length of time until 50 percent of the final (28-day) strength is reached can be read off from this Table as a function of the temperature and the type of concrete.

The values are only valid if the concrete is given correct, appropriate curing throughout the entire period.

For a concrete with medium strength development, the following inferred graph may thus be used.

Concrete-strength development – medium



A $\vartheta \geq 15°$

B $\vartheta \geq 10°$

C $\vartheta \geq 5°$

Deflection of the new concrete

The concrete's modulus of elasticity develops faster than compressive strength. At 60 % of its compressive strength f_{ck}, the concrete has already reached approximately 90% of its modulus of elasticity $E_{c(28)}$.

The increase in the elastic deformation taking place in the new concrete is thus only negligible.

The creep deformation, which only finally ceases after several years, is several times more than the elastic deformation.

Early striking – e.g. after 3 days instead of 28 – thus only leads to an increase in the total deformation of less than 5%.

The part of this deformation accounted for by creep deformation, however, may be anything between 50% and 100% of the standard value, due to such variable influences as the strength of the aggregates, and the atmospheric humidity. This means that the total deflection of the floor-slab is practically independent of the time at which the formwork was struck.

Cracks in new concrete

The bonding strength between the reinforcement steel and the concrete develops more rapidly in the new concrete than does its compressive strength. This means that early stripping does not have any negative influence upon the size and distribution of cracks on the tension side of reinforced concrete constructions.

Other cracking phenomena can be countered effectively by appropriate curing methods.

Curing of new concrete

New site-placed concrete is exposed to influences which may cause cracking and slow down its strength development:

- premature drying
- over-rapid cooling in the first few days
- excessively low temperatures or frost
- mechanical damage to the surface of the concrete
- hydration heat
- etc.

The simplest precaution is to leave the formwork on the concrete surface for longer. As well as the familiar extra curing measures, this measure should be carried out in any case.

Removing the load from the formwork from wide-spanned floor-slabs with support centres of over 7.5m

In the case of thin, wide-spanned concrete floor-slabs (e.g. in multistorey car parks), the following points must be remembered:

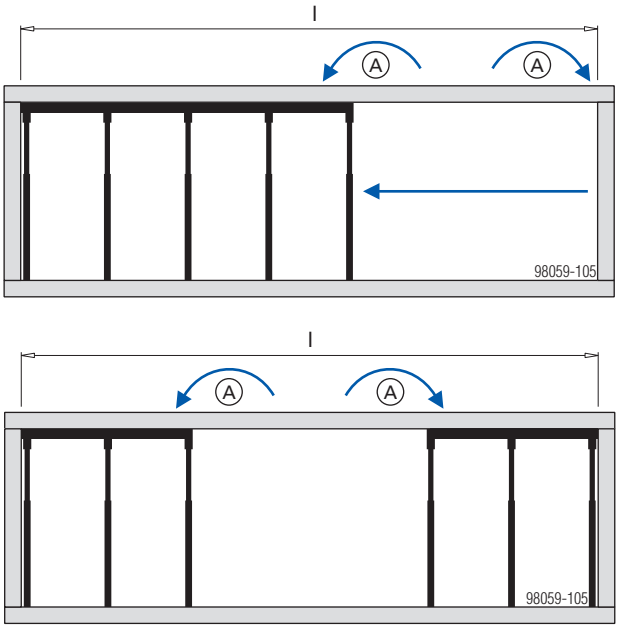
- When the formwork beneath these floor-slab spans is released (i.e. when the load is taken off the floor props), the floor props that are still in place are briefly subjected to additional loads. This may lead to overloading, and to the floor props being damaged.
- Please consult your Doka technician.

NOTICE

As a basic rule:

- Stress-release should always be carried out working **from one side towards the other, or from the middle of the floor-slab (mid-span) towards the slab-edges**.

  For wide spans, this procedure MUST be followed!
- Stress-release must **NEVER** be carried out **from both sides towards the middle**!



l ... Effective floor-slab spans of 7.50 m and over

A Load redistribution

Horizontal loads of floor formwork

Note:

This section deals only with the typical zone for horizontal floor formwork. Special areas (edge, drop beams, steps, sloping slabs, etc.) have to be examined and planned separately!

Horizontal loads imposed while the concrete is being poured are considerably higher than the horizontal loads imposed during installation. Consequently appropriate measures are required to transfer them, for example:

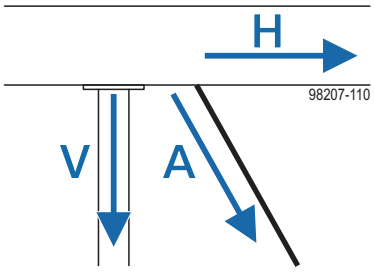
- into the building structure (columns or walls).
- by cables, straps, plumbing struts or bracings.

The load-bearing capacities of these measures can be combined and added, but uniformity of distribution and design is important.
In this context, the area to be supported (influence width) of each measure has to be calculated.

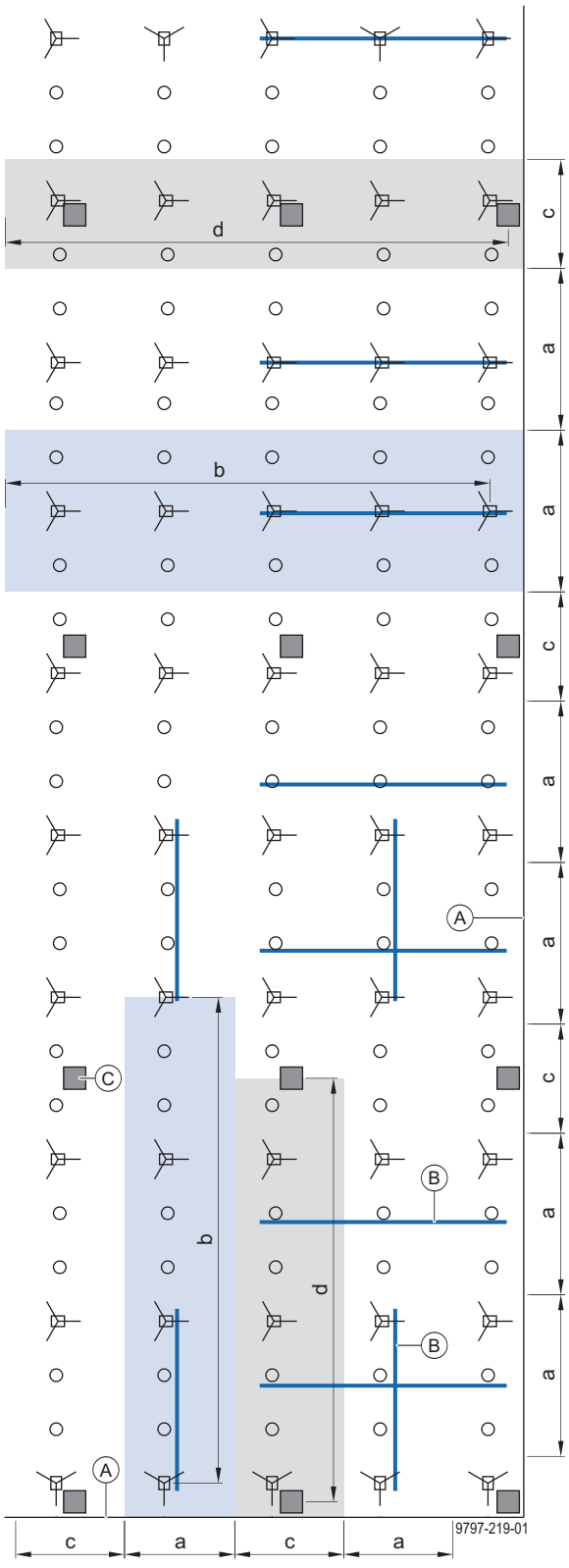
- The forces occur in all directions.
- As regards the transmission of the horizontal loads into an existing structure, it can be assumed that structural components which carry horizontal loads in the final state can do so also during pouring of the concrete floor-slab, for example high-rise building core or solid reinforced-concrete columns.

  Slender columns hinged at both ends at the edges of structures are not suitable. Contact the structural designer if questions arise!
- The floor-slab loads are a uniformly distributed load, so the horizontal loads also occur distributed over a large area.

  If the horizontal loads are transmitted in concentrated form by tie-backs, it is important to form a non-positive locked formwork plane (friction, pressure contact, form-fit, pull nails, etc.).
- Particularly during assembly, storage areas on the floor formwork have to be considered separately on account of the concentrated higher loads! Additional precautions are needed here!
- When diagonal bracing is used to sustain horizontal loads, the vertical component has to be taken into account as an additional load on the floor props.



H Horizontal load
V Vertical load
A Tie-back force



area of influence of the bracing
a influence width of the bracing
b spacing of the bracing in primary-beam and secondary-beam directions
area of influence of the existing column
c influence width of an existing column
d distance between columns

A Slab edge (open)
B Bracing or tie-back
C Existing column

The table below can be used as a rough guide to sizing for calculating the area of influence of the bracing, tie backs or columns:

Horizontal loads [kN]

Slab thickness [cm]	Slab surface [m²]									
	5	10	15	20	25	30	35	40	45	50
10	**0.6**	**1.1**	**1.5**	**2.0**	**2.4**	2.8	3.3	3.7	4.2	4.6
12	**0.6**	**1.2**	**1.7**	**2.2**	2.7	3.2	3.7	4.2	4.7	5.2
14	**0.7**	**1.3**	**1.9**	2.5	3.0	3.6	4.1	4.7	5.3	5.8
16	**0.8**	**1.5**	**2.1**	2.7	3.3	3.9	4.6	5.2	5.8	—
18	**0.8**	**1.6**	**2.3**	3.0	3.6	4.3	5.0	5.7	—	—
20	**0.9**	**1.7**	2.5	3.2	3.9	4.7	5.4	—	—	—
22	**0.9**	**1.8**	2.6	3.4	4.2	5.1	5.9	—	—	—
24	**1.0**	**2.0**	2.8	3.7	4.6	5.4	—	—	—	—
26	**1.1**	**2.1**	3.0	3.9	4.9	5.8	—	—	—	—
28	**1.1**	**2.2**	3.2	4.2	5.2	—	—	—	—	—
30	**1.2**	**2.3**	3.4	4.4	5.5	—	—	—	—	—
32	**1.3**	2.5	3.6	4.7	5.8	—	—	—	—	—
34	**1.3**	2.6	3.8	4.9	—	—	—	—	—	—
36	**1.4**	2.7	4.0	5.2	—	—	—	—	—	—
38	**1.5**	2.9	4.1	5.4	—	—	—	—	—	—
40	**1.5**	3.0	4.3	5.7	—	—	—	—	—	—
42	**1.6**	3.1	4.5	—	—	—	—	—	—	—
44	**1.7**	3.3	4.7	—	—	—	—	—	—	—
46	**1.7**	3.4	4.9	—	—	—	—	—	—	—
48	**1.8**	3.5	5.1	—	—	—	—	—	—	—
50	**1.9**	3.7	5.3	—	—	—	—	—	—	—
52	**1.9**	3.8	5.5	—	—	—	—	—	—	—
54	**2.0**	3.9	5.7	—	—	—	—	—	—	—
56	**2.1**	4.1	5.9	—	—	—	—	—	—	—

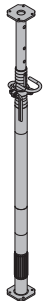
Notes on utilisation for the table:

- Assumption: Horizontal load of 2.5%, comprising the following:
  - 1% for imperfections
  - 1% for horizontal equivalent load
  - 0.5% for wind load
- The horizontal loads occur in all directions.
- All values are lower than 6 kN. It can be assumed that these forces are sustained by a load-bearing structural column and are transmitted by friction.
- The horizontal loads with blue background are less than 2.5 kN and can be transferred by Doka tie-back solutions. A permissible tie-back force of max. 5 kN at an angle of 60° is assumed.

	[kg]	Article N°
Doka floor prop Eurex 20 top 150 Length: 92 - 150 cm	**8.0**	**586096000**
Doka floor prop Eurex 20 top 250 Length: 148 - 250 cm	**12.7**	**586086400**
Doka floor prop Eurex 20 top 300 Length: 173 - 300 cm	**14.3**	**586087400**
Doka floor prop Eurex 20 top 350 Length: 198 - 350 cm	**17.4**	**586088400**
Doka floor prop Eurex 20 top 400 Length: 223 - 400 cm	**21.6**	**586089400**
Doka floor prop Eurex 20 top 550 Length: 298 - 550 cm	**32.3**	**586090400**

Doka-Deckenstütze Eurex 20 top

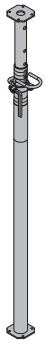
Galvanised



Doka floor prop Eurex 20 LW 300 Length: 173 - 300 cm	**11.5**	**586876000**
Doka floor prop Eurex 20 LW 350 Length: 198 - 350 cm	**13.9**	**586877000**

Doka-Deckenstütze Eurex 20 LW

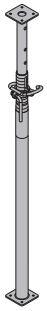
Galvanised



Doka floor prop Eurex 20 eco 250 Length: 148 - 250 cm	**11.5**	**586270000**
Doka floor prop Eurex 20 eco 300 Length: 173 - 300 cm	**14.0**	**586271000**
Doka floor prop Eurex 20 eco 350 Length: 198 - 350 cm	**16.9**	**586272000**
Doka floor prop Eurex 20 eco 400 Length: 223 - 400 cm	**21.8**	**586273000**
Doka floor prop Eurex 20 eco 450 Length: 248 - 450 cm	**24.1**	**586275000**
Doka floor prop Eurex 20 eco 550 Length: 298 - 550 cm	**32.0**	**586276000**

Doka-Deckenstütze Eurex 20 eco

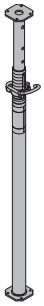
Galvanised



	[kg]	Article N°
Doka floor prop Eurex 20 250 Length: 152 - 250 cm	**12.9**	**586086000**
Doka floor prop Eurex 20 300 Length: 172 - 300 cm	**15.3**	**586087000**
Doka floor prop Eurex 20 350 Length: 197 - 350 cm	**17.8**	**586088000**
Doka floor prop Eurex 20 400 Length: 227 - 400 cm	**22.2**	**586089000**
Doka floor prop Eurex 20 550 Length: 297 - 550 cm	**34.6**	**586090000**

Doka-Deckenstütze Eurex 20

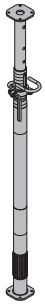
Galvanised



Doka floor prop Eurex 30 top 250 Length: 148 - 250 cm	**12.8**	**586092400**
Doka floor prop Eurex 30 top 300 Length: 173 - 300 cm	**16.4**	**586093400**
Doka floor prop Eurex 30 top 350 Length: 198 - 350 cm	**20.7**	**586094400**
Doka floor prop Eurex 30 top 400 Length: 223 - 400 cm	**24.6**	**586095400**
Doka floor prop Eurex 30 top 450 Length: 248 - 450 cm	**29.1**	**586119400**
Doka floor prop Eurex 30 top 550 Length: 303 - 550 cm	**38.6**	**586129000**

Doka-Deckenstütze Eurex 30 top

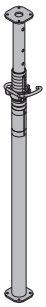
Galvanised



Doka floor prop Eurex 30 400 Length: 227 - 400 cm	**24.9**	**586095000**
Doka floor prop Eurex 30 450 Length: 248 - 450 cm	**29.2**	**586119000**

Doka-Deckenstütze Eurex 30

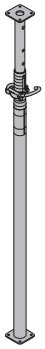
Galvanised



	[kg]	Article N°
Doka floor prop Eco 20 250 Length: 152 - 250 cm	**11.7**	**586134000**
Doka floor prop Eco 20 300 Length: 172 - 300 cm	**13.0**	**586135000**
Doka floor prop Eco 20 350 Length: 197 - 350 cm	**15.3**	**586136000**
Doka floor prop Eco 20 400 Length: 227 - 400 cm	**19.1**	**586137000**

Doka-Deckenstütze Eco 20

Galvanised

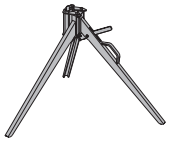


Removable folding tripod top Stützbein top	**12.0**	**586155500**

Galvanised
Height: 80 cm
Delivery condition: folded closed

Removable folding tripod Stützbein	**15.6**	**586155000**

Galvanised
Height: 80 cm
Delivery condition: folded closed

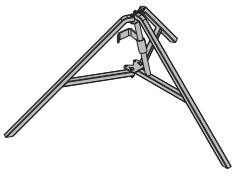


Removable folding tripod 1.20m Stützbein 1,20m	**20.7**	**586145000**

Galvanised
Height: 120 cm
Delivery condition: folded closed

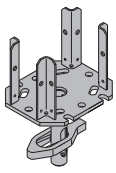
Removable folding tripod eco Stützbein eco	**9.4**	**586294000**

Galvanised
Height: 67.5 cm
Delivery condition: folded closed



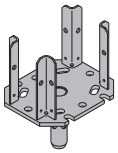
Lowering head H20 Absenkkopf H20	**6.1**	**586174000**

Galvanised
Length: 25 cm
Width: 20 cm
Height: 38 cm



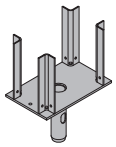
4-way head H20 Vierwegkopf H20	**4.0**	**586170000**

Galvanised
Length: 25 cm
Width: 20 cm
Height: 33 cm



4-way head H20 eco Vierwegkopf H20 eco	**2.7**	**586183000**

Galvanised
Length: 23 cm
Width: 15 cm
Height: 33 cm



Spring locked connecting pin 16mm Federbolzen 16mm	**0.25**	**582528000**

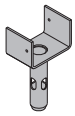
Galvanised
Length: 15 cm

Supporting head H20 DF Haltekopf H20 DF	**0.77**	**586179000**

Galvanised
Length: 19 cm
Width: 11 cm
Height: 8 cm

U-head 12.5cm Kopfgabel 12,5cm	**1.2**	**586171000**

Galvanised
Height: 23 cm

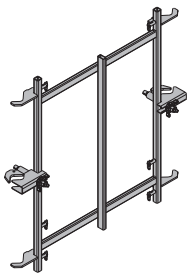


Floor prop spring clamp Federklammer Deckenstütze	**0.08**	**586169000**

Powder-coated

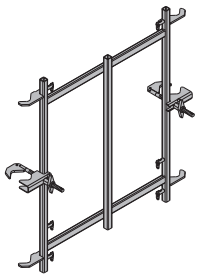
Bracing frame Eurex 1.00m Aufstellrahmen Eurex 1,00m	**15.5**	**586596000**

Galvanised
Height: 111 cm



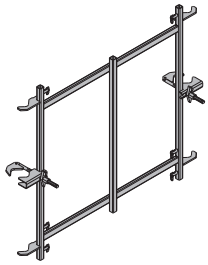
Bracing frame Eurex 1.00m A Aufstellrahmen Eurex 1,00m A	**15.0**	**586599000**

Galvanised
Height: 111 cm



	[kg]	Article N°
Bracing frame Eurex 1.22m	**16.0**	**586557000**
Bracing frame Eurex 0.81m	**14.5**	**586558000**

Aufstellrahmen



Galvanised
Height: 111 cm

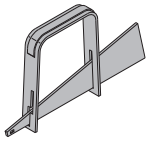
Diagonal cross 9.060	**3.1**	**582322000**
Diagonal cross 9.100	**4.1**	**582772000**
Diagonal cross 9.150	**5.2**	**582773000**
Diagonal cross 9.175	**6.1**	**582334000**
Diagonal cross 9.200	**6.6**	**582774000**
Diagonal cross 9.250	**7.7**	**582775000**
Diagonal cross 9.300	**9.0**	**582323000**
Diagonal cross 12.060	**4.0**	**582324000**
Diagonal cross 12.100	**4.6**	**582610000**
Diagonal cross 12.150	**5.7**	**582612000**
Diagonal cross 12.175	**6.3**	**582335000**
Diagonal cross 12.200	**6.9**	**582614000**
Diagonal cross 12.250	**8.3**	**582616000**
Diagonal cross 12.300	**9.3**	**582325000**
Diagonal cross 18.100	**6.1**	**582620000**
Diagonal cross 18.150	**6.9**	**582622000**
Diagonal cross 18.175	**7.8**	**582336000**
Diagonal cross 18.200	**7.8**	**582624000**
Diagonal cross 18.250	**9.1**	**582626000**
Diagonal cross 18.300	**10.3**	**582326000**

Diagonalkreuz

Galvanised
Delivery condition: folded closed

Bracing clamp B	**1.4**	**586195000**

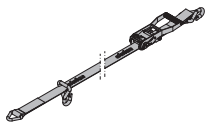
Verschwertungsklammer B



Painted blue
Length: 36 cm

Lashing strap 5.00m 2G	**2.9**	**586018500**

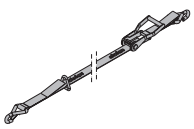
Zurrgurt 5,00m 2G



Yellow

Lashing strap 5.00m	**2.8**	**586018000**

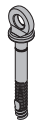
Zurrgurt 5,00m



Yellow

	[kg]	Article N°
Doka express anchor 16x125mm	**0.31**	**588631000**

Doka-Expressanker 16x125mm



Galvanised
Length: 18 cm

Doka coil 16mm	**0.009**	**588633000**

Doka-Coil 16mm

Galvanised
Diameter: 1.6 cm

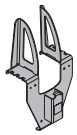
Information plate for express anchor	**0.1**	**588630000**

Plakette Expressanker

PS
Width: 8 cm
Height: 7.5 cm

Secondary-beam stabiliser 1	**1.6**	**586196000**
Secondary-beam stabiliser 2	**2.1**	**586197000**

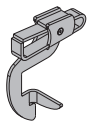
Querträgersicherung



Galvanised
Height: 38.7 cm

Connector clip H20	**0.7**	**586184000**

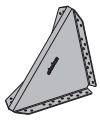
Kreuzverbinder H20



Galvanised
Height: 18 cm

Universal end-shutter support 30cm	**1.0**	**586232000**

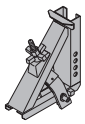
Universal-Abschalwinkel 30cm



Galvanised
Height: 21 cm

Beam forming support 20	**6.9**	**586148000**

Balkenzwinge 20



Galvanised
Length: 30 cm
Height: 35 cm

Extension for beam forming support 60cm	**4.4**	**586149000**

Balkenaufsatz 60cm

Galvanised

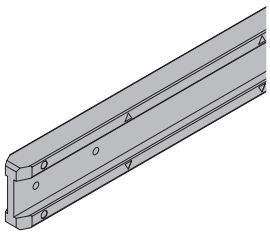
	[kg]	Article N°
Doka floor end-shutter clamp Doka-Deckenabschalklemme Galvanised Height: 137 cm	**12.5**	**586239000**
End-shutter shoe Abschalschuh Galvanised Height: 13.5 cm	**1.6**	**586257000**
End-shutter tie rod 15.0 15-40cm Abschalanker 15,0 15-40cm Galvanised Length: 55 cm	**0.91**	**586258000**
Floor end-shutter profile XP Deckenabschalprofil XP Galvanised Height: 77 cm	**4.2**	**586481000**
Wheel-around scaffold DF Mobilgerüst DF Aluminium Length: 185 cm Width: 80 cm Height: 255 cm Delivery condition: separate parts	**44.0**	**586157000**
Wheel-around scaffold DF accessory set Zubehörset Mobilgerüst DF Aluminium Timber parts varnished yellow Length: 189 cm	**13.3**	**586164000**
Platform stairway 0.97m Podesttreppe 0,97m Aluminium Width: 121 cm Pay attention to the national, technical safety regulations!	**23.5**	**586555000**

	[kg]	Article N°
Universal dismantling tool Universal-Lösewerkzeug Galvanised Length: 75.5 cm	**3.7**	**582768000**
Alu beam fork H20 Alu-Trägergabel H20 Aluminium Powder-coated yellow Length: 176 cm	**2.4**	**586182000**
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-Träger H20 top N Varnished yellow		
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-Träger H20 top P Varnished yellow		

	[kg]	Article N°
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-Träger H20 eco N

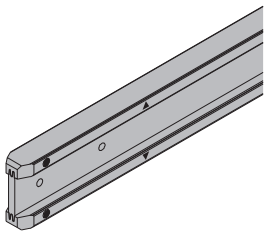
Varnished yellow



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-Träger H20 eco P

Varnished yellow



Doka formwork sheet 3-SO 21mm 200/50cm	**9.7**	**186009000**
Doka formwork sheet 3-SO 21mm 250/50cm	**12.1**	**186011000**

Doka-Schalungsplatte 3-SO 21mm

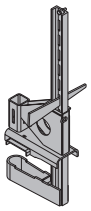
Doka formwork sheet 3-SO 27mm 200/50cm	**12.1**	**187009000**
Doka formwork sheet 3-SO 27mm 250/50cm	**15.1**	**187011000**

Doka-Schalungsplatte 3-SO 27mm

Railing clamp XP 40cm	**7.7**	**586456000**

Geländerzwinge XP 40cm

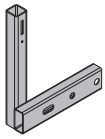
Galvanised
Height: 73 cm



Insertion adapter XP	**4.1**	**586478000**

Einschubadapter XP

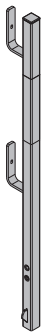
Galvanised
Height: 43 cm



	[kg]	Article N°
Handrail post XP 1.20m	**4.1**	**586460000**

Geländersteher XP 1,20m

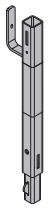
Galvanised
Height: 118 cm



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

Geländersteher XP 0,60m

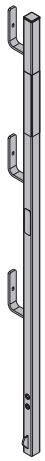
Galvanised
Height: 68 cm



Handrail post XP 1.80m	**6.0**	**586482000**

Geländersteher XP 1,80m

Galvanised
Height: 176 cm



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

Fußwehrhalter XP 1,20m

Galvanised
Height: 21 cm

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

Fußwehrhalter XP 0,60m

Galvanised
Height: 21 cm

Handrail clamp S	**11.5**	**580470000**

Schutzgeländerzwinge S

Galvanised
Height: 123 - 171 cm

	[kg]	Article N°
Handrail post 1.10m Schutzgeländer 1,10m Galvanised Height: 134 cm	**5.5**	**584384000**
Attachable sleeve 24mm Steckhülse 24mm PVC PE Grey Length: 16.5 cm Diameter: 2.7 cm	**0.03**	**584385000**
Screw sleeve 20.0 Schraubhülse 20,0 PP Yellow Length: 20 cm Diameter: 3.1 cm	**0.03**	**584386000**
Scaffold tube 48.3mm 0.50m	**1.7**	**682026000**
Scaffold tube 48.3mm 1.00m	**3.6**	**682014000**
Scaffold tube 48.3mm 1.50m	**5.4**	**682015000**
Scaffold tube 48.3mm 2.00m	**7.2**	**682016000**
Scaffold tube 48.3mm 2.50m	**9.0**	**682017000**
Scaffold tube 48.3mm 3.00m	**10.8**	**682018000**
Scaffold tube 48.3mm 3.50m	**12.6**	**682019000**
Scaffold tube 48.3mm 4.00m	**14.4**	**682021000**
Scaffold tube 48.3mm 4.50m	**16.2**	**682022000**
Scaffold tube 48.3mm 5.00m	**18.0**	**682023000**
Scaffold tube 48.3mm 5.50m	**19.8**	**682024000**
Scaffold tube 48.3mm 6.00m	**21.6**	**682025000**
Scaffold tube 48.3mm .....m Gerüstrohr 48,3mm Galvanised	**3.6**	**682001000**
Screw-on coupler 48mm 50 Anschraubkupplung 48mm 50 Galvanised Width-across: 22 mm	**0.8**	**682002000**

FreeFalcon

	[kg]	Article N°
FreeFalcon FreeFalcon Red Length: 225 cm Width: 208 cm Height: 235 cm Follow the directions in the "Operating Instructions"! CE	**450.0**	**583034000**
Mast cover FreeFalcon Abdeckung Mast FreeFalcon Red	**3.8**	**583027000**
Base-plate cover FreeFalcon Abdeckung Sockelplatte FreeFalcon Red	**3.2**	**583026000**
Safety harness FreeFalcon Auffanggurt FreeFalcon Follow the directions in the "Operating Instructions"! CE	**1.5**	**583036000**
Fall arrester FreeFalcon 9.00m Höhensicherungsgerät FreeFalcon 9,00m Follow the directions in the "Operating Instructions"! CE	**3.8**	**583035000**
Fall arrester FreeFalcon 6.00m Höhensicherungsgerät FreeFalcon 6,00m Follow the directions in the "Operating Instructions"! CE	**3.3**	**583039000**
Case for safety accessories FreeFalcon Koffer Sicherheitszubehör FreeFalcon	**1.5**	**583037000**

Multi-trip packaging

	[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 accessory box Doka-Kleinteilebox Timber parts varnished yellow Steel parts galvanised Length: 154 cm Width: 83 cm Height: 77 cm	**106.4**	**583010000**
Bolt-on castor set B Anklemm-Radsatz B Painted blue	**33.6**	**586168000**
Doka skeleton transport box 1.70x0.80m Doka-Gitterbox 1,70x0,80m Galvanised Height: 113 cm	**87.0**	**583012000**

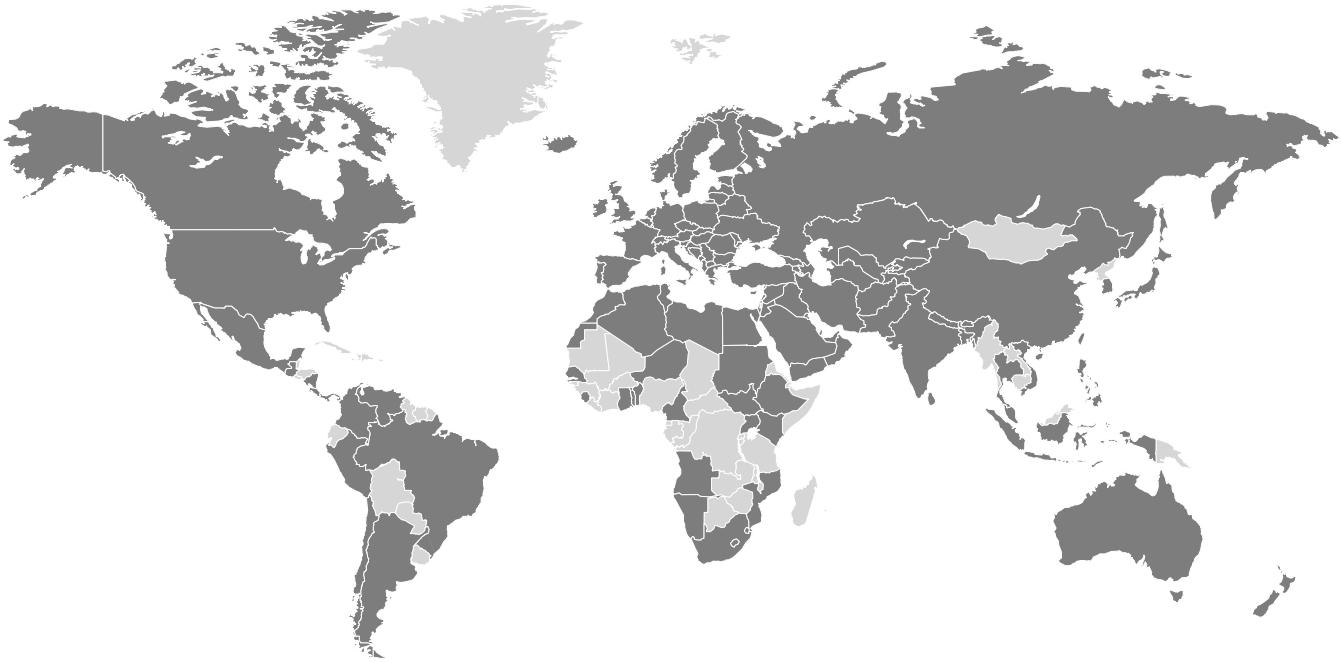
	[kg]	Article N°
Doka stacking pallet 1.55x0.85m Doka-Stapelpalette 1,55x0,85m Galvanised Height: 77 cm	**41.0**	**586151000**
Doka stacking pallet 1.20x0.80m Doka-Stapelpalette 1,20x0,80m Galvanised Height: 77 cm	**38.0**	**583016000**

Near to you, worldwide

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

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

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



www.doka.com/dokaflex