Column formwork RS

User Information
Instructions for assembly and use (Method statement)
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**User target groups**

- This manual 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 manual 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 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 rules throughout the entire project and to take appropriate additional or alternative workplace safety precautions where necessary.

**Hazard assessment**

- The customer is responsible for drawing up, documenting, implementing and continually updating a hazard assessment at every job-site. This document 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.

**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.

**Remarks on this document**

- This manual can also be used as a generic method statement or incorporated with a site-specific method statement.
- Many of the illustrations in this booklet show the situation during formwork assembly and are therefore not always complete from the safety point of view.
- Any safety accessories not shown in these illustrations must still be used by the customer, in accordance with the applicable rules and regulations.
- Further safety instructions, especially warnings, will be found in the individual sections of this document!

** Symbols used**

- **Important note**
  Failure to observe this may lead to malfunction or damage.

- **CAUTION / WARNING / DANGER**
  Failure to observe this may lead to material damage, and to injury to health which may range up to the severe or even life-threatening.

- **Instruction**
  This symbol indicates that actions need to be taken 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**
  Refers to other documents and materials.
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 of all components and units must be ensured during all phases of the construction work!
- The functional/technical instructions, safety warnings and loading data must all be strictly observed and complied with. Failure to do so can cause accidents and severe (even life-threatening) damage to health, as well as very great material damage.
- Fire-sources are not permitted anywhere near the formwork. Heating appliances are only allowed if properly and expertly used, and set up a safe distance away from the formwork.
- The work must take account of the weather conditions (e.g. risk of slippage). In extreme weather, steps must be taken in good time to safeguard the equipment, and the immediate vicinity of the equipment, and to protect employees.
- All connections must be checked regularly to ensure that they still fit properly and are functioning correctly. It is very important to check all screw-type connections and wedge-clamped joins whenever the construction operations require (particularly after exceptional events such as storms), and to tighten them if necessary.

Assembly

- The equipment/system must be inspected by the customer before use, to ensure that it is in suitable condition. Steps must be taken to rule out the use of any components that are damaged, deformed, or weakened due to wear, corrosion or rot.
- Combining our formwork systems with those of other manufacturers could be dangerous, risking damage to both health and property. If you intend to combine different systems, please contact Doka for advice first.
- The equipment/system must be assembled and erected in accordance with the applicable laws, Standards and rules by suitably skilled personnel of the customer's, having regard to any and all required safety inspections.
- It is not permitted to modify Doka products; any such modifications constitute a safety risk.

Erecting the formwork

- Doka products and systems must be set up 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.

Striking the formwork

- Do not strike the formwork until the concrete has reached sufficient strength and the person in charge has given the order for the formwork to be struck!
- When striking 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 striking 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 regulations applying to the handling of formwork and scaffolding. In addition, the Doka slinging means must be used - this is a mandatory requirement.
- Remove any loose parts or fix them in place so that they cannot be dislodged or fall free!
- All components must be stored safely, following all the special Doka instructions given in the relevant sections of this manual!

Regulations; industrial safety

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

Maintenance

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

Miscellaneous

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

In Europe, a uniform series of Standards known as Eurocodes (EC) was developed for the construction field by the end of 2007. These are intended to provide a uniform basis, valid throughout Europe, for product specifications, tenders and mathematical verification. The EC are the world’s most highly developed Standards in the construction field.

In the Doka Group, the EC are to be used as standard from the end of 2008. They will thus supersede the DIN norms as the “Doka standard” for product design.

The widely used "Permissible stress design" (comparing the actual stresses with the permissible stresses) has been superseded by a new safety concept in the EC.

The EC contrast the actions (loads) with the resistance (capacity). The previous safety factor in the permissible stresses is now divided into several partial factors. The safety level remains the same!

Comparison of the safety concepts (example)

<table>
<thead>
<tr>
<th>Permissible stress design</th>
<th>EC/DIN concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>115.5 [kN]</td>
<td>115.5 [kN]</td>
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<tr>
<td>90&lt;105 [kN]</td>
<td>90 [kN]</td>
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<tr>
<td>60&lt;70 [kN]</td>
<td>60 [kN]</td>
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<tr>
<td>60 [kN]</td>
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</tbody>
</table>

The "permissible values" communicated in Doka documents (e.g.: Q_{permissible} = 70 kN) do not correspond to the design values (e.g.: V_{Rd} = 105 kN)!

Avoid any confusion between the two!

Our documents will continue to state the permissible values.

Allowance has been made for the following partial factors:

- γ_F = 1.5
- γ_M, timber = 1.3
- γ_M, steel = 1.1
- k_{mod} = 0.9

In this way, all the design values needed in an EC design calculation can be ascertained from the permissible values.
Doka services

Support in every stage of the project

Doka offers a broad spectrum of services, all with a single aim: to help you succeed on the site. Every project is unique. Nevertheless, there is one thing that all construction projects have in common – and that is a basic structure with five stages. We at Doka know our clients’ varying requirements. With our consulting, planning and other services, we help you achieve effective implementation of your formwork assignment using our formwork products – in every one of these stages.

1. Project Development Stage
   - Taking well-founded decisions thanks to professional advice and consulting
   - Find precisely the right formwork solutions, with the aid of
     - help with the bid invitation
     - in-depth analysis of the initial situation
     - objective evaluation of the planning, execution, and time-risks

2. Bidding Stage
   - Optimising the preliminary work with Doka as an experienced partner
   - Draw up potentially winning bids, by
     - basing them on realistically calculated guideline prices
     - making the right formwork choices
     - having an optimum time-calculation basis

3. Project Management Planning Stage
   - Controlled, regular forming operations, for greater efficiency resulting from realistically calculated formwork concepts
   - Plan cost-effectively right from the outset, thanks to
     - detailed offers
     - determination of the commissioning quantities
     - co-ordination of lead-times and handover deadlines
The advantages for you
thanks to professional advice and consulting

▪ Cost savings and time gains
When we advise and support you right from the word “go”, we can make sure that the right formwork systems are chosen and then used as planned. This lets you achieve optimum utilisation of the formwork equipment, and effective forming operations because your workflows will be correct.

▪ Maximised workplace safety
The advice and support we can give you in how to use the equipment correctly, and as planned, leads to greater safety on the job.

▪ Transparency
Because our services and costs are completely transparent, there is no need for improvisation during the project – and no unpleasant surprises at the end of it.

▪ Reduced close-out costs
Our professional advice on the selection, quality and correct use of the equipment helps you avoid damage, and minimise wear-and-tear.
**Product description**

**Doka column formwork RS - the steel formwork for high-grade circular reinforced concrete columns**

Column formwork RS is used for producing concrete surfaces that meet more stringent (fair-faced) specifications. Its precision-manufactured half-shells ensure that the column cross-section is perfectly circular, even at the shell joins.

Circular-section columns, straight from Doka’s modular "construction kit" ...

- with integral quick-acting connectors for fast, zero-play connections between the shells
- with exactly fitting shell joins, thanks to the integral centring function
- for forming curved stop-ends or oval columns, Column formwork RS can be connected directly (i.e. without adapters) to:
  - Doka framed formwork Framax Xlife and Alu-Framax Xlife
  - Doka circular formwork H 20

Permitted fresh-concrete pressure: 150 kN/m²
Areas of use

The following features are integrated in every Column element RS:
- connectors for joining together and vertically stacking the half-shells
- crane-hoisting point
- stacking lugs
- centring mechanism

To form a column cross-section, two Column elements RS are joined together.

Height grid

By combining panels with heights of 0.25 m, 0.50 m, 1.00 m and 3.00 m, a 25 cm height grid is obtained. Column elements RS 0.25 m may only be used as the top elements. The crane lifting chain, and all connections to the vertical profile, must be attached to the column element below this top element.

Column diameters

D= 30, 35, 40, 45, 50 and 60 cm

Diameters 24, 25, 55, 65, 70, 75, 80, 90, 100, 110, 120, 130, 140, 150 and 180 cm on enquiry.

Materials schedule

<table>
<thead>
<tr>
<th>Formwork height [m]</th>
<th>3.00m</th>
<th>1.00m</th>
<th>0.50m</th>
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<td>8.00</td>
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Follow the directions in the section headed "Additional precautions" in the following cases:
- high (over 4.50 m) stacked multi-element gangs, to stiffen the formwork when lifting it into the upright
- multi-element gangs made by stacking many small column elements
Design of column formwork

Vertical stacking of column elements

➤ Place the Column elements RS (B) on a flat surface.

➤ Fix the Connecting screws RS (C) between the elements to be stacked.

➤ Pre-assemble the other half-shell in the same way.

Erecting the formwork

Stand the pre-assembled formwork-halves on end, and secure them

➤ Use the crane to lift the first half of the formwork into the upright.

➤ Attach two panel struts (A) to this formwork-half to prevent it from falling over (see "Plumbing accessories" for details of how to attach the panel struts). Do not detach it from the crane until the panel struts are attached.

To save crane time, the panel struts can be attached to the half-shell while it is still lying on the ground.

Join the formwork-halves together

The integrated centring tool makes it easy to position the two halves exactly.

➤ Lift the second half of the formwork into the upright by crane.

To achieve a precision stacking join between the Column elements RS, we recommend fixing the Connecting screws RS in the following order.

Preparations for using the Doka column formwork platform 150/90 cm

➤ Attach the lifting chain to the integrated crane-hoisting points and raise the formwork-half.

➤ Attach the Platform adapter RS (D) with Connecting screws RS (C) (is only needed on one of the formwork-halves).

➤ Link the formwork-halves with the integrated quick-acting connectors (E). Do not detach the second half-shell from the crane before both halves of the formwork are properly connected.
Stripping and repositioning the formwork

First formwork-half
➤ Attach the lifting chain to the formwork-half that is not shored by panel struts.
➤ Undo the quick-acting connector and separate the two formwork-halves.

CAUTION
➤ When stripping the formwork, never use the crane to break concrete cohesion. Use suitable tools such as timber wedges or a special pry-bar.
➤ Lift the formwork-half that is attached to the crane, and set it down on the ground for cleaning.

Second formwork-half
➤ Attach the crane suspension tackle to the shored (i.e. still standing) formwork-half.
➤ Undo the panel-strut anchorages from the ground.
➤ Set down the crane-held half of the formwork ready for cleaning, and secure it so that it cannot fall over.

For information on how to reposition a formwork-half complete with a platform, see "Platform configurations with Doka column formwork platform 150/90 cm".

Cleaning and care of your equipment

Before using
The steel form-facing is supplied coated with a rust inhibitor that also acts as a release agent.
➤ Wipe off excess rust inhibitor with a cloth, leaving only a very thin film.

After pouring:
➤ Remove any blobs of concrete from the back-face of the formwork, using water (without any added sand).
➤ Do not use any pointed or sharp objects, wire brushes, rotating grinding disks or pan scourers.
➤ Apply release agent to the formwork sheet and the end faces extremely thinly, evenly and in a continuous layer (make sure there are no traces of release-agent running down the formwork sheet)! Applying too much release agent will spoil the concrete finish.

Important note:
Do not use any chemical cleaning agents!
Assembly instructions

User Information Column formwork RS

Plumbing accessories

Fixing to the ground

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

Drilled holes in the footplates

| Panel struts | Eurex 60 550 | Adjustable plumb-
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>a ... diam. 26 mm</td>
<td>b ... diam. 18 mm</td>
<td>c ... diam. 28 mm</td>
</tr>
<tr>
<td>d ... diam. 18 mm</td>
<td>e ... slotted hole diam. 18x38 mm</td>
<td>f ... diam. 35 mm</td>
</tr>
</tbody>
</table>

Anchoring the footplate

The Doka Express anchor can be re-used many times over - the only tool needed for screwing it in is a hammer.

| Characteristic cube compressive strength of the concrete (fck,cube): min. 25 N/mm² or 250 kg/cm² (C20/25 grade concrete) |
| Follow the Fitting Instructions! |

Required safe working load of alternative anchors for foot-plates:

Rd ≥ 20.3 kN (F permissible ≥ 13.5 kN)

Follow the manufacturer's applicable fitting instructions.

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

Important note:

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

Please observe all applicable safety regulations!

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

Number of struts for each formwork-half to be shored:

<table>
<thead>
<tr>
<th>Formwork height [m]</th>
<th>Panel strut 340</th>
<th>Panel strut 540</th>
<th>Eurex 60 550</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 4.00</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Up to 5.50</td>
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<tr>
<td>Up to 8.00</td>
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<tr>
<td>Max. anchoring load: Fk = 13.5 kN (Rd = 20.3 kN)</td>
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</table>

Follow the Fitting Instructions!
Fixing the struts to the formwork

**Variant 1**

➤ Place the Prop head EB up against one of the clamping points on the Column element RS, and fix it in place with the star grip nut.

**Variant 2**

➤ Pin the panel strut directly into the pin-holes on the vertical profile.

Panel struts

**Product features:**

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

Eurex 60 550 used as a shoring & plumbing accessory

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

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

Combined with the Column formwork platform 150/90cm, the Ladder system XS provides a safe and reliable way of climbing up and down column formworks:
- during pouring
- when placing reinforcing cages
- when opening/closing the formwork-halves
- when attaching/detaching the formwork-halves

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

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

Preparing the formwork-halves

### Formwork-half without column formwork platform

**Mount the ladder system to the horizontal half of the formwork.**
- For information on vertical stacking of the column elements, see "Column formwork set-up".

To make it easier to mount and dismount the "Connectors XS RS", the formwork-half can be placed on top of Doka multi-trip transport boxes.

- Fit the Connector XS RS into the vertical profile of the Column element RS and use a bolt and linch pin to fix it in the top hole.

If the Connector XS RS would otherwise collide with a panel strut, there are 3 possible solutions:
- Bolt the Connector XS RS into the bottom hole.
- Mount the panel-strut lower down.
- Mount the panel strut first, then the Connector XS RS.

- Slide the cantilever profile into the ideal position and fix it in place with the star grip nut.

- Bolt the ladder to the XS connector in the front position, using the push-in bolt. Secure the push-in bolt with a linch pin.

**Note:**
When used with the Ladder system XS, both formwork-halves must each be fitted with 2 panel struts.
Fit the Connector XS RS into the bottom vertical profile of the Column element RS and fix it with a bolt and linch pin.

For formwork heights above 5.00 m, an extra Connector XS RS must be fitted approx. half-way up the column, in the same way. This extra connector prevents the ladder swaying when site crew climb up or down it.

Slide the cantilever profile to align it to the ladder, and fix it in place with the star grip nut.

Pre-assembly

Pre-assemble the Ladder system XS and the Column formwork platform 150/90cm flat on the ground, and hoist them onto the upright half of the formwork using the Doka 4-part chain 3.20m. (Shorten the 2 lengths of chain nearest the entry-point by removing approx. five chain-links!)

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

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

Fasten the "Connector XS column formwork platform" to the Doka column formwork platform 150/90cm, using the screws, bolts etc. supplied.

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

Insert the push-in bolt into the rung that is suitable for the height of the column, and twist to secure.

Formwork-half with Column formwork platform

Prepare the formwork-half ready to be used with the Doka column formwork platform 150/90 cm (see "Column formwork set-up")
Ladder system XS for heights above 3.60 m

Telescoping ladder extension (for adjusting to ground level)
➤ To telescope the ladders past one another, lift the safety latch on the ladder and fix the Ladder extension XS 2.30m onto the desired rung of the other ladder.

Close-up

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

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

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

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

Important note:
➤ Always observe all relevant safety regulations applying to the use of the Ladder cage XS in the country in which you are operating (e.g. in Germany: BGV D 36).
➤ Fix the Ladder cage exit XS (the underside must always be at the same height as the “Connector XS for column formwork platform”). The safety latches prevent the cage being accidentally lifted out.

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

Screws (C)

Tr625-201-04

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

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

Tr625-201-01

D Ladder cage exit XS
F Safety latch

Tr625-201-02

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

➤ Use the crane to lift the first formwork-half (without the column formwork platform) into the upright.

➤ Attach two panel struts to this formwork-half to prevent it from falling over (see "Plumbing accessories" for details of how to attach the panel struts). Do not detach it from the crane until the panel struts are attached.

Join the formwork-halves together

➤ Use the crane to lift the second half of the formwork into the upright.

➤ Attach two panel struts to this formwork-half to prevent it from falling over (see "Plumbing accessories" for details of how to attach the panel struts). Do not detach it from the crane until the panel struts are attached.

➤ Link the formwork-halves with the integrated quick-acting connectors (E).

➤ Mount the bottom Connector XS RS as shown in "Formwork-half without column formwork platform".

➤ For formwork heights above 5.50 m, an extra Connector XS RS must be fitted approx. half-way up the column, in the same way. This extra connector prevents the ladder swaying when site crew climb up or down it.

➤ Hang the prepared column formwork platform, complete with the ladder, into place on the column formwork.

➤ Fix the ladder in the Connectors XS RS.

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

First formwork-half
➤ Attach the crane suspension tackle to the formwork-half on which the Column formwork platform is mounted.
➤ Undo the panel-strut anchorages from the ground.
➤ Undo the quick-acting connector and separate the two formwork-halves.

➤ Set down the crane-held half of the formwork ready for cleaning, and secure it so that it cannot fall over.

CAUTION ➤ When stripping the formwork, never use the crane to break concrete cohesion. Use suitable tools such as timber wedges or a special pry-bar.

Second formwork-half
➤ Attach the crane suspension tackle to the shored (i.e. still standing) formwork-half.
➤ Undo the panel-strut anchorages from the ground.
➤ Set down the crane-held half of the formwork ready for cleaning, and secure it so that it cannot fall over.

For more information on cleaning and care of the equipment, see "Design of column formwork".

Items needed

Formwork-half with Column formwork platform

<table>
<thead>
<tr>
<th>Platform + ladder</th>
<th>Formwork height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector XS for column formwork platform</td>
<td>2.75-3.50 m</td>
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<tr>
<td>Connector XS RS</td>
<td>1</td>
</tr>
<tr>
<td>System ladder XS 4.40m</td>
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</tr>
<tr>
<td>Ladder extension XS 2.30m</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ladder cage</th>
<th>Formwork height</th>
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</thead>
<tbody>
<tr>
<td>Ladder cage exit XS</td>
<td>5.00-5.25 m</td>
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<tr>
<td>Ladder cage XS 1.00m</td>
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</tbody>
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Formwork-half without column formwork platform

<table>
<thead>
<tr>
<th>Ladder</th>
<th>Formwork height</th>
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<tbody>
<tr>
<td>Connector XS RS</td>
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<td>Ladder extension XS 2.30m</td>
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<table>
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<th>Ladder cage</th>
<th>Formwork height</th>
</tr>
</thead>
<tbody>
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<td>Ladder cage exit XS</td>
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<tr>
<td>Ladder cage XS 1.00m</td>
<td>2</td>
</tr>
</tbody>
</table>

See "Lifting the formwork and platform in one piece" for details of how to lift and reposition the formwork-half complete with the platform.
Pouring platforms with single brackets

In conjunction with the Framax bracket 90, the Bracket connection RS makes it possible to mount pouring platforms on the Column elements RS.

Basic design concept

➤ Hook the Bracket connection RS into the Column element RS and fix it with a bolt and linch pin.

➤ Using Framax wedge bolts RA 7.5, bolt the Framax bracket 90 into the Bracket connection RS.

➤ Secure the Framax bracket with a Spring cotter 5mm at top and bottom.

Platform decking and guard rails

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

Board thicknesses for support centres of up to 2.50 m:
- Deck-boards min. 20x5 cm
- Guard-rail boards min. 20x3 cm, otherwise detailed dimensioning to EN 12811.

Note:
The plank and board thicknesses given here comply with the C24 category of EN 338.
Observe all national regulations applying to deck-boards and guard-rail boards.

Fastening the deck-boards: with 5 square bolts M 10x120 per bracket (not included in scope of supply).

Using scaffolding tubes

Tools: Fork spanner 22 for mounting the couplers and scaffolding tubes.

A Scaffold tube connector
B Scaffolding tube 48.3mm
C Screw-on couplers 48mm 50
D Hexagon screw M14x40 + hexagon nut M14 (not included with product)
Platform configurations with Doka column formwork platform 150/90cm

Product description

The main features:
- This pre-assembled, ready-to-use platform ensures convenient and safe working on column formworks. It can be used on columns of any cross-section.
- The slinging points recessed into the decking make it a quick and easy job to lift the platform by crane. Only one column formwork platform can be used on each column!
- Because the platform can be re-suspended so quickly, it can "migrate" from one formwork to the next during concreting. This means that one platform is sufficient to serve several column formworks.
- The practical swing-out side railings make it easy to get on or off the platform. Both the side railings can be fixed in either the open or closed position.

Combined with the Column formwork platform 150/90cm, the Doka Ladder system XS provides a safe and reliable way of climbing up and down column formworks.

Basic design concept

➤ Tip up the side railings.

The railings are locked in place automatically.

➤ Tip up the rear railings.

The railings are locked in place automatically.

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

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

Preparing the formwork

➤ Attach the Platform adapter RS to the formwork.

For information on preparing the formwork for using the Doka column formwork platform, see 'Column formwork set-up'.
Moving the platform

➤ Attach a four-part lifting chain (e.g. Doka 4-part chain 3.20m) to the points shown here.

➤ Hook the platform onto the pre-mounted Platform adapter RS.

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

The safety hook (D) drops down into its starting position and automatically secures the platform against being accidentally lifted out.

➤ When the platform is lifted, the lifting chain acts on the safety hook (D) and the platform is automatically unlocked.

Follow the directions in the "Doka 4-part chain 3.20m" Operating Instructions!

Suspending the platform exactly in position is made much easier when guide-cables are used.
Moving the formwork and the platform in one piece

To save crane time, the Doka column formwork platform can also be repositioned together with the formwork:
➤ Hang the platform into place on the formwork (proceed as in "Moving the platform").
➤ Move the extra crane hoisting point (E) from the parked position to the "in-use" position. Right position = inclined forward towards formwork.

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

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

➤ Attach a four-part lifting chain (e.g. Doka 4-part chain 3.20m). When the formwork plus platform are to be lifted in one piece, the extra hoisting point must be used.

Separating the platform from the formwork
➤ Fix the slide bolt (F) back in the rear position and move the extra crane hoisting point into the "parked" position.
➤ Attach the crane to the locations shown in "Moving the platform".
Column formwork RS used together with . . .

Doka framed formwork Framax Xlife

Practical example

"Oval columns" with column-formwork stop-ends.
The Column elements RS are connected to the Framax Xlife panels using standard framed-formwork connectors.
The positions of the Framax quick-acting clamps RU or Framax multi-function clamps needed here are dictated by the integrated quick-acting connectors.

When used with Framax Xlife:
The Column elements RS come with a centring mechanism on one side. When they are clamped directly onto framed formwork panels, this centring mechanism must be dismounted.

- Dismount the centring mechanism (E)
- Add a hardboard strip (F)

Doka circular formwork H 20

Practical example: Guiding walls

Column elements RS used as stop-ends on Circular formwork H20.
The Column elements RS are connected with the standard connectors for Circular formwork H20.
The positions of the 'Adjustable clamps 10cm' needed here are dictated by the integrated quick-acting connectors.

The centring mechanism can either
- be dismounted (see previous example) or
- be left on the column element if it can protrude into a recess cut out of a timber filler.

Close-up of timber filler

A Column element RS
B Centring mechanism
C Circular formwork H20
D Timber filler
E Adjustable clamp 10cm
Examples of the system in action
Additional precautions

Bracing

▪ on high (over 4.50 m) multi-element gangs, to stiffen the formwork when lifting it into the upright
▪ on multi-element gangs made by stacking many small column elements

with a "Screw-set M16x40 DIN 933 8.8"

➤ Fit the "Screw-set M16x40" on the shell join.

The screws must be fitted in the diam. 20 mm holes on the outside reinforcement ribs
For each formwork-half, one "Screw-set M16x40" must be provided for every vertical stacking join.

with Multipurpose walings WS10 Top50

Length of Multi-purpose walings:

The Multi-purpose walings should be long enough to overlap the column-element reinforcement ribs immediately above and below the join.

Attaching the Multipurpose waling:

Do this with Framax universal fixing bolts 10-25 cm (A) and Super-plates 15.0 (B) fixed to the clamping points on the column elements (C).
In each case, there should be one fixing-point above the join, and one below it.
Mount one Multi-purpose waling WS10 or WU12 per formwork-half, on the connector-free side of the formwork.

Attaching the panel struts

Sealing the shell joins

Optimum sealing of the joins between the column elements is obtained by using the self-adhesive Sealing tape KS.
As the sealing tape is squeezed outward when the column elements are pressed together, the tape should be positioned between 0.5 mm and 1 mm away from the edge facing the concrete. This prevents any tape protruding and making a negative impression in the concrete.
Transporting, stacking and storing

The Column elements RS can be hoisted either individually or in a stack.
Max. 8 Column elements RS may be stacked on top of one another outdoors – on flat, even ground – without being specially secured.
➤ To protect the steel form-facing from corrosion, store the shells in a roofed-over place or under tarpaulins.
The "Skeleton transport box" and "Multi-trip transport box" are suitable for storing and transporting 0.25 and 0.50 m high Column elements RS.
The integral stacking lugs on the Column elements RS secure the stack against both lengthways and side-ways slippage.
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 devices for small items:
- durable
- stackable

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

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

Max. load: 700 kg
Permitted imposed load: 3150 kg

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

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

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

Lifting by crane

> Only lift the boxes when their sidewalls are closed!

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

Repositioning by forklift truck or pallet stacking truck

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

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

Max. n° of boxes on top of one another

<table>
<thead>
<tr>
<th>Outdoors (on the site)</th>
<th>Indoors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor gradient up to 3%</td>
<td>Floor gradient up to 1%</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>

It is not allowed to stack empty pallets on top of one another!
Doka multi-trip transport box
1.20x0.80m galv.

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

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

Max. load: 1500 kg
Permitted imposed load: 7900 kg

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

Multi-trip transport box partition

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

Possible ways of dividing the box

<table>
<thead>
<tr>
<th>Multi-trip transport box partition</th>
<th>Lengthways</th>
<th>Crossways</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.20m</td>
<td>max. 3 partitions</td>
<td>-</td>
</tr>
<tr>
<td>0.80m</td>
<td>-</td>
<td>max. 3 partitions</td>
</tr>
</tbody>
</table>

Using Doka multi-trip transport boxes as storage units

Max. n° of boxes on top of one another

<table>
<thead>
<tr>
<th></th>
<th>Outdoors (on the site)</th>
<th>Indoors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Floor gradient up to 3%</td>
<td>Floor gradient up to 1%</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

It is not allowed to stack empty pallets on top of one another!

Using Doka multi-trip transport boxes as transport devices

Lifting by crane

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

Repositioning by forklift truck or pallet stacking truck

The forks can be inserted under either the broadside or the narrowside of the containers.
Doka stacking pallet 1.55x0.85m and 1.20x0.80m

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

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

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

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

Using Doka stacking pallets as transport devices

Lifting by crane

- Multi-trip packaging items may only be lifted one at a time.
- Use a suitable lifting chain. (Do not exceed the permitted load capacity). e.g: Doka 4- part chain 3.20m.
- Load the items centrically.
- Fasten the load to the stacking pallet so that it cannot slide or tip out.
- When lifting stacking pallets to which Bolt-on castor sets B have been attached, you must also follow the directions in these Operating Instructions!
- Spread-angle β max. 30°!

Max. load: 1100 kg
Permitted imposed load: 5900 kg

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

Using Doka stacking pallets as storage units

Max. n° of units on top of one another

<table>
<thead>
<tr>
<th>Outdoors (on the site)</th>
<th>Indoors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor gradient up to 3%</td>
<td>Floor gradient up to 1%</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>

It is not allowed to stack empty pallets on top of one another!

- How to use with bolt-on castor set:
  Always apply the fixing brake when the container is "parked". When Doka stacking pallets are stacked, the bottom pallet must NOT be one with a bolt-on caster set mounted to it.

Repositioning by forklift truck or pallet stacking truck

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

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

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

The Doka accessory box is the tidy, easy-to-find way of storing and stacking all interconnection and form-tie components.
The Bolt-on caster set B turns the stacking pallet into a fast and manoeuvrable transport trolley.

Follow the directions in the "Bolt-on caster set B" Operating Instructions!

Max. load: 1000 kg
Permitted imposed load: 5530 kg

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

Doka accessory box as transport devices

Lifting by crane

- Multi-trip packaging items may only be lifted one at a time.
- Use a suitable lifting chain. (Do not exceed the permitted load capacity). e.g: Doka 4-part chain 3.20m.
- When lifting stacking pallets to which Bolt-on caster sets B have been attached, you must also follow the directions in these Operating Instructions!
- Spread-angle $\beta$ max. 30°!

Repositioning by forklift truck or pallet stacking truck

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

Bolt-on castor set B

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

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

Follow the directions in the Operating Instructions!
## Component overview

**User Information Column formwork RS**

<table>
<thead>
<tr>
<th>Article n°</th>
<th>[kg]</th>
<th>Object</th>
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<tbody>
<tr>
<td>Column element RS D30 3.00m</td>
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</tr>
<tr>
<td>Column element RS D30 1.00m</td>
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</tbody>
</table>

**Panel strut 540 IB**

Elementstütze 540 IB

consisting of:

(A) **Plumbing strut 540 IB**
- Galvanised
- Length: 310.5 - 549.2 cm

(B) **Adjusting strut 220 IB**
- Galvanised
- Length: 172.5 - 221.1 cm

![Panel strut 540 IB](image)

**Eurex 60 550**

Eurex 60 550

depending on length, comprising:

(A) **Plumbing strut Eurex 60 550**
- Powder-coated, blue Aluminium
- Length: 343 - 553 cm

(B) **Extension Eurex 60 2.00m**
- Powder-coated, blue Aluminium
- Length: 250 cm

(C) **Coupler Eurex 60**
- Aluminium
- Length: 100 cm
- Diameter: 12.8 cm

(D) **Connector Eurex 60 IB**
- Galvanised
- Length: 15 cm
- Width: 15 cm
- Height: 30 cm

(E) **Plumbing strut shoe Eurex 60 EB**
- Galvanised
- Length: 31 cm
- Width: 12 cm
- Height: 33 cm

(F) **Adjusting strut 540 Eurex 60 IB**
- Galvanised
- Length: 303.5 - 542.2 cm

![Eurex 60 550](image)

**Panel strut 340 IB**

Elementstütze 340 IB

consisting of:

(A) **Plumbing strut 340 IB**
- Galvanised
- Length: 190.0 - 341.8 cm

(B) **Adjusting strut 120 IB**
- Galvanised
- Length: 81.5 - 130.6 cm

![Panel strut 340 IB](image)

**Panel strut 540 IB**

Elementstütze 540 IB

consisting of:

(A) **Plumbing strut 540 IB**
- Galvanised
- Length: 310.5 - 549.2 cm

(B) **Adjusting strut 220 IB**
- Galvanised
- Length: 172.5 - 221.1 cm

![Panel strut 540 IB](image)

**Eurex 60 550**

Eurex 60 550

depending on length, comprising:

(A) **Plumbing strut Eurex 60 550**
- Powder-coated, blue Aluminium
- Length: 343 - 553 cm

(B) **Extension Eurex 60 2.00m**
- Powder-coated, blue Aluminium
- Length: 250 cm

(C) **Coupler Eurex 60**
- Aluminium
- Length: 100 cm
- Diameter: 12.8 cm

(D) **Connector Eurex 60 IB**
- Galvanised
- Length: 15 cm
- Width: 15 cm
- Height: 30 cm

(E) **Plumbing strut shoe Eurex 60 EB**
- Galvanised
- Length: 31 cm
- Width: 12 cm
- Height: 33 cm

(F) **Adjusting strut 540 Eurex 60 IB**
- Galvanised
- Length: 303.5 - 542.2 cm

![Eurex 60 550](image)
<table>
<thead>
<tr>
<th>[kg]</th>
<th>Article n°</th>
<th>[kg]</th>
<th>Article n°</th>
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<tr>
<td>Prop head EB</td>
<td>3.1</td>
<td>588244500</td>
<td>Countertop railing column formwork platform 150/90cm</td>
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<tr>
<td>Stützenkopf EB</td>
<td>Galvanised Length: 40.8 cm Width: 11.8 cm Height: 17.6 cm</td>
<td>Galvanised Width: 87 cm Height: 170 cm</td>
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<tr>
<td>Adjustable plumbing strut</td>
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<tr>
<td>depending on length, comprising:</td>
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<tr>
<td>(A) Spindle head</td>
<td>3.6</td>
<td>584322000</td>
<td>Platform adapter RS</td>
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<tr>
<td>Galvanised</td>
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<td>Bühnenanschluss RS</td>
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<tr>
<td>(B) Spindle element without end-hinge</td>
<td>30.6</td>
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<td>Galvanised Length: 78 cm Width: 78 cm Height: 19 cm</td>
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<tr>
<td>(C) Extension strut 3.70m</td>
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<tr>
<td>(D) Extension strut 2.40m</td>
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<tr>
<td>(E) Spindle element with end-hinge</td>
<td>38.4</td>
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<tr>
<td>Painted blue Delivery condition: separate parts</td>
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<tr>
<td>Universal dismantling tool</td>
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<td>Bracket connection RS</td>
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<tr>
<td>Universal-Lösewerkzeug</td>
<td>Galvanised Length: 75.5 cm</td>
<td>Galvanised Height: 61 cm</td>
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<tr>
<td>Doka express anchor 16x125mm</td>
<td>0.31</td>
<td>588631000</td>
<td>Framax bracket 90</td>
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<tr>
<td>Doka-Expressanker 16x125mm</td>
<td>Galvanised Length: 18 cm Follow fitting instructions!</td>
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<td>Doka coil 16mm</td>
<td>0.009</td>
<td>588633000</td>
<td>Doka-Vierstrangkette 3,20m</td>
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<td>Doka-Coil 16mm</td>
<td>Galvanised Diameter: 1.6 cm</td>
<td>Follow the directions in the “Operating Instructions”!</td>
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<tr>
<td>Doka column formwork platform 150/90cm</td>
<td>211.8</td>
<td>588382000</td>
<td>Screw-set M16x40 8.8</td>
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<tr>
<td>Doka-Stützenbühne 150/90cm</td>
<td>Galvanised Length: 173 cm Width: 173 cm Height: 130 cm Delivery condition: folded closed</td>
<td>Galvanised Width-across: 24 mm</td>
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### Component overview

<table>
<thead>
<tr>
<th>Article</th>
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<tr>
<td>Multi-purpose waling WS10 Top50 2.50m</td>
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<td>Multi-purpose waling WS10 Top50 5.50m</td>
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<td>Multi-purpose waling WS10 Top50 6.00m</td>
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<th>Article</th>
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<td>Super plate 15.0</td>
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Galvanised

Height: 6 cm

Diameter: 12 cm

Width: across: 27 mm

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<tr>
<th>Article</th>
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<td>Framax universal fixing bolt 10-25cm</td>
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Galvanised

Length: 36 cm

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Galvanised

Length: 14 cm

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<td>Spring cotter 5mm</td>
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Galvanised

Length: 13 cm

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<td>Sealing tape KS 20x5mm 10m</td>
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Dichtungsband KS 20x5mm 10m
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<td>Connector XS RS Anschluss XS RS</td>
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<td>Connector XS column formwork platform Anschluss XS Stützenbühne</td>
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<td>Galvanised Length: 123 cm</td>
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<td>33.2</td>
<td>System ladder XS 4.40m System-Leiter XS 4.40m</td>
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<td>588641000</td>
<td>19.1</td>
<td>Ladder extension XS 2.30m Leiternverlängerung XS 2.30m</td>
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<td>Securing barrier XS Sicherungsschanke XS</td>
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<td>Galvanised Length: 80 cm</td>
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<td>Multi-trip packaging</td>
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<td>Doka skeleton transport box 1.70x0.80m Doka-Gitterbox 1.70x0.80m</td>
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<td>Doka stacking pallet 1.55x0.85m Doka-Stapelpalette 1.55x0.85m</td>
<td>42.0</td>
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<td>Height: 77 cm</td>
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<td>Doka accessory box Doka-Kleinteilebox</td>
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<td>Timber parts varnished yellow</td>
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Doka is one of the world leaders in developing, manufacturing and distributing formwork technology for use in all fields of the construction sector. With more than 160 sales and logistics facilities in over 70 countries, the Doka Group has a highly efficient distribution network which ensures that equipment and technical support are provided swiftly and professionally. An enterprise forming part of the Umdasch Group, the Doka Group employs a worldwide workforce of more than 5600.