Dokaset
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**Component overview**

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Elementary safety warnings

User target groups

- This User Information booklet (Method Statement) is aimed at everyone who will be working with the Doka product or system it describes. It contains information on how to set 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.

Remarks on this document

- This User Information booklet 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.
- Further safety instructions, especially warnings, will be found in the individual sections of this document!

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.

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 under the direction and supervision of suitably skilled persons with the authority to issue instructions.
- Doka products are ONLY to be used in accordance with the Doka User Information booklets or other technical documentation provided 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 assembly work must be carried out by suitably qualified employees of the client's.
Erecting the formwork

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

Pouring

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

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 User Information booklet!

Regulations; industrial safety

- Always observe all industrial safety regulations and other safety rules applying to the application and utilisation of our products in the country and/or region in which you are operating.

Instruction as required by EN 13374:

- If a person or object falls against, or into, the side-guard system and/or any of its accessories, the side-guard 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.

Symbols used

The following symbols are used in this booklet:

- **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.

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!

\[ E_d \leq R_d \]

**Table 1: Comparison of the safety concepts (example)**

<table>
<thead>
<tr>
<th>Permissible stress design</th>
<th>EC/DIN concept</th>
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<tr>
<td>( F_{\text{yield}} )</td>
<td>( F_{\text{yield}} )</td>
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<tr>
<td>( 115.5 \text{ [kN]} )</td>
<td>( 115.5 \text{ [kN]} )</td>
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<tr>
<td>( \gamma_F )</td>
<td>( \gamma_M )</td>
</tr>
<tr>
<td>( F_{\text{actual}} )</td>
<td>( \gamma_F = 1.5 )</td>
</tr>
<tr>
<td>( 60&lt;70 \text{ [kN]} )</td>
<td>( 90&lt;105 \text{ [kN]} )</td>
</tr>
<tr>
<td>( 60 \text{ [kN]} )</td>
<td>( \gamma_M = 1.3 )</td>
</tr>
<tr>
<td>( F_{\text{permissible}} )</td>
<td>( \gamma_M, \text{timber} = 1.3 )</td>
</tr>
<tr>
<td>( 90 \text{ [kN]} )</td>
<td>( \gamma_M, \text{steel} = 1.1 )</td>
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<tr>
<td>( k_{\text{mod}} = 0.9 )</td>
<td>( k_{\text{mod}} = 0.9 )</td>
</tr>
</tbody>
</table>

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

- Avoid any confusion between the two!
- Our documents will continue to state the permissible values.

Allowance has been made for the following partial factors:

\[ \gamma_F = 1.5 \]

\[ \gamma_M, \text{timber} = 1.3 \]

\[ \gamma_M, \text{steel} = 1.1 \]

\[ k_{\text{mod}} = 0.9 \]

In this way, all the design values needed in an EC design calculation can be ascertained from the permissible values.
**Product description**

Dokaset is the ideal formwork for meeting the demands made in the building construction field. The **very high load-bearing capacity and long lifespan** of Dokaset make it an **economical solution** for all wall-forming tasks.

**Permitted fresh-concrete pressure: 80 kN/m²**

Among the **many advantages** of Dokaset:

- **small numbers of form-ties**, as only 2 ties are needed per 2.70 m width, saving both materials and manhours
- up to a formwork height of 3.37 m, **only 1 form-tie in the concrete**

- **formwork can be tied working from one side only**—easy and time-saving
- **much higher number of form-ply re-use cycles** than with conventional plywood sheets, thanks to the use of the long-lived Xlife sheet
- **All the main jobs on the formwork can be carried out from the ground**, for example:
  - attaching the connecting devices
  - tying
  - attaching/detaching the formwork to/from the crane
- **high standard of safety**

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Instructions for assembly and use

Transporting / handling the panels
➤ To separate the panels, use the Doka 4-part chain 3.20m (see "Transporting, stacking and storing").
➤ Set the panel down on an assembly bench.

Preparing the gang-forms
➤ Combine the panels into gang-forms (see "Gang-forms").
➤ Mount the opposing guard-rail posts and Dokaset head anchors.

Panel struts, 2-part chain
➤ With the gang-form still flat, mount panel struts to it (see "Plumbing accessories").
➤ Mount a Dokaset 2-part chain 1.50m (see "Gang-forms").
Erecting the formwork
➤ Attach the lifting chain to the Dokaset-2-part chain 1.50m.
➤ Pick up the element by crane.
➤ Spray the ply with release agent (see "Cleaning and care").
➤ Fly the element to its new location.

CAUTION
Never use a sledge-hammer to plumb and align the gang-forms!
This would damage the profiles of the gangs.
➤ Use only proper plumbing tools (e.g. a special pry-bar) that cannot cause any damage.
➤ Apply plumbing tools to the bottom angle only.
➤ Fix the panel struts firmly to the ground (see "Plumbing accessories").

The element is now stable and can be plumbed and aligned exactly, with no need for the crane.
➤ Detach the element from the crane.
➤ Continue lining up further gang-forms in this way, and link them together (see "Gang-forms").

Set up the side of the formwork with the platform
Once the reinforcement has been placed, the formwork can be closed.
➤ Unfold the rear railings, side railings and platform.

See also "Platform system".

Ladder system
➤ Attach the ladder in the desired position.

See also "Ladder system".
Panel struts, 2-part chain
➤ With the gang-form still flat, mount panel struts to it (see "Plumbing accessories").

➤ Mount a Dokaset 2-part chain 1.50m (see "Gang-forms").

➤ In all other respects, the procedure is the same as described in the previous section "Erecting the formwork".

➤ Take the form-ties out of the stand-by position, apply concrete release agent as needed, and fit the form-ties (see "Dokaset form-tie system").

➤ When raising a 2.70x2.70m panel, it is OK to pass the 2-part chain across the sturdy rear railings.
Pouring

➤ Permitted fresh-concrete pressure: 80 kN/m²
➤ See also "Concrete pressure on perpendicular formwork to DIN 18218" in the Doka Calculation Guide.
➤ Concrete compaction by vibration must comply with DIN 4235 Part 2.
➤ Pour the concrete.
➤ Make only moderate use of vibrators, carefully coordinating the times and locations of vibrator use.

Striking

➤ Observe the stipulated striking times.
➤ Take out and "park" the form-ties.
➤ Undo the connectors to the adjacent elements.
➤ Remove any loose items from the formwork and platforms, secure them or put them into the stand-by position.
➤ Attach the panel to the crane.
➤ Undo the ground anchors of the panel struts.

![Warning]

**WARNING**
The formwork tends to adhere to the concrete. When stripping the formwork, do not try to break concrete cohesion using the crane! Risk of crane overload.
➤ Use suitable tools such as timber wedges or a special pry-bar to detach the formwork from the concrete.

➤ Lift the gang-form away and to its next location.

If the gang-form is "parked" prior to its next use, it must have sufficient stability (see "Plumbing accessories").
➤ Clean residual concrete off the form-ply (see "Cleaning and care").
The Dokaset panel in detail

Clean concrete surfaces with the innovative Xlife sheet

The Xlife sheet consists of a combination of a traditional plywood core and a novel and innovative plastic coating.

This combination of materials ensures high numbers of repeat uses, with superb concrete results every time, and reduces the proneness to damage.

- High quality concrete finish
- Less touching-up needed
- Less cleaning work - the Xlife sheet can also be cleaned using a high-pressure spray cleaner
- No breaking away of plywood chips, and less water is absorbed through nail-holes
- Because the Xlife sheet is screwed on from the rear, this leaves no screw imprints on the concrete

Dimensionally stable, galvanised steel frame

High load-bearing capacity

**Permitted fresh-concrete pressure:** 80 kN/m²

- Full hydrostatic fresh-concrete pressure up to a height of 2.77 m, with no limitation on the pouring rate
- Low deflection

Types of panel:
- Dokaset panel 2.70x2.70m with platform
- Dokaset panel 2.70x2.70m
- Dokaset panel 1.35x2.70m with platform
- Dokaset panel 1.35x2.70m

WARNING

➤ It is forbidden to climb on the cross-profiles. The cross-profiles are NOT a substitute for a ladder.
Accessories are easy to fasten, in the integrated waling system

Strong walings

- sustain the full hydrostatic concrete pressure
- minimise deflection
- have integral slinging points for resetting the panels by crane
- have integral stacking shoes

Bottom angle

- provides clearance for e.g. up to 5 cm high installation lines
- facilitates formwork removal

Platform

- fold-away, ready-to-use platforms for convenient, safe working
- integral guard rails
- floor decking with grate

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

Combined with Framax Xlife panels, Dokaset permits a **panel size-grid in 15 cm** increments. This advantageous increment-grid makes Dokaset both flexible and economical.

- Easy planning and forming
- Height and width can be adjusted in 15 cm increments
- Very few closures needed
- Clear joint pattern

**Only 1 form-tie in the concrete.** Up to a formwork height of 3.37 m, only one form-tie is needed in the concrete.

Only 2 form-ties per 2.70 m of width.

Dokaset panels

![Dokaset panel diagram]

Dimensions in cm

Framax Xlife panels

The following Framax Xlife panels are suitable for use in length adjustment:

![Framax Xlife panel diagram]

Dimensions in cm

Vertical stacking with horizontal Framax Xlife panels can be carried out using any width from 30 to 135 cm.
Dokaset form-tie system

Dokaset tension tie 10-30cm
- for wall thicknesses from 10 to 30 cm
- can be operated from one side
- no expendable jacket tubes

● for wall thicknesses from 10 to 30 cm
● can be operated from one side
● no expendable jacket tubes

User information

Dokaset tension tie 10-30cm

Adjusting the Dokaset tension tie

Setting the wall-thickness grid
- Unscrew the hexagon screw and pull it out.
- Pull the adjusting sleeve and the pressing plate off the rod.
- Separate the adjusting sleeve from the pressing plate by moving it to one side.
- Select the desired wall-thickness grid for the adjusting sleeve, then push it and the pressing plate back onto the rod.

Adapting to the wall thickness
- Position the pressing plate and the adjusting sleeve on the form-tie:
  - for 10 to 30 cm grid: on the groove
  - for 10.5 to 30.5 cm grid: between two grooves

Example with a wall thickness of 16 cm:

Example with a wall thickness of 27.5 cm:

The double groove (P) marks a wall thickness of 20 cm.

➤ Turn the adjusting sleeve, fit the hexagon screw into the relevant hole and fix it with the cap nut.

Wall-thickness grid:
- 10 to 30 cm, in 1 cm increments
- 10.5 to 30.5 cm, in 1 cm increments (for adjustments)

Dokaset tension tie 10-30cm:
- Permitted capacity, allowing a 1.6 : 1 factor of safety against failure: 220 kN
- Permitted capacity to DIN 18216: 150 kN

A Form-tie
B Pressing plate
C Adjusting sleeve
D Hexagonal screw
E Cap nut

98004-203-01

98004-256-01

K Mounting position for a wall-thickness grid of 10 to 30 cm
L Mounting position for a wall-thickness grid of 10.5 to 30.5 cm

98004-257-01

P The double groove (P) marks a wall thickness of 20 cm.

98004-258-01

98004-259-01
Operating the form-tie from one side

Fixing the form-tie:
➤ Screw the Dokaset tension tie all the way into the integrated tying component (T) of the opposing formwork, until it fully engages, and tighten it (screw-in depth = 9 cm).

Tools: Formwork hammer (U)

Removing the form-tie:
➤ Unscrew the Dokaset tension tie from the tying component (T) (9 cm).
Tools: Dokaset ratchet 3/4", width-across 36

Spraying the conical part of the Dokaset tension tie with concrete release agent will make it easier to detach it from the concrete.

➤ Take out and "park" the form-ties.

Parking the Dokaset tension tie
To facilitate transport and handling, the Dokaset tension tie can be "parked" in the bottom stacking shoe. The form-tie is then available for immediate reuse at the next usage location.

S Bottom stacking shoe
Tying across the top of the Dokaset panel

On a formwork height of 277 cm, the Dokaset head anchor 12-36cm is used as a pressure anchor. It is placed across the top of the panel.

- for wall thicknesses from 12 to 36 cm
- firmly holds the two sides of the formwork the required distance apart

Possible mounting positions:
- On the opposing formwork – bolted in place on every U240 waling together with the Dokaset railing holder.
- On the platform side - bolted in place in every U240 waling.

How to use the Dokaset head anchor 12-36cm:

➤ Bolt the Dokaset head anchor into the Dokaset waling.
➤ Telescope the Dokaset head anchor to the desired length "a" (wall thickness) and fix it in the relevant hole with a bolt and spring cotter.

Tension/pressure tie across top of formwork

For formwork heights of 307, 322 and 337 cm, the form-tie at the top of the formwork must be a tension and pressure tie.
Closing off the form-tie point

Dokaset closure cone 20cm

- fire-resistant
- sound-insulating

➤ As soon as the formwork has been removed, press a Dokaset closure cone into the opening. The residual moisture in the concrete makes the cone sit firmly in place, so it is not necessary to glue it in.
➤ On walls that are less than 20 cm thick, simply knock off the projecting part of the cone with a hammer.
➤ On walls that are more than 20 cm thick, fill in the rest of the form-tie point with mortar mixture.

Dokaset fibre-concrete cone 30cm

- water-impermeable
- fire-resistant
- sound-insulating
- gas-impermeable
- radiation-proof

We recommend the following materials for gluing in the plugs:
- Commercially available cement mortar, e.g. repair and renovation mortar, watertight exterior grouting compound etc.
  Pay attention to the colour of the concrete here!
- Tile bonding cement (is mostly dark) in cases where the colour of the concrete is unimportant.
➤ Cut the Dokaset fibre-concrete cone 30cm to the length needed for the thickness of the wall.
➤ Evenly distribute the mortar mixture in the conical opening and then slowly press the fibre-concrete cone into the opening while gently turning it. (Using a piece of wood makes it easier to fit the plug on the right plane).
➤ Fit a fibre concrete plug into the opposite side of the wall.

Fibre concrete plugs

- water-impermeable
- fire-resistant

A Fibre concrete plug 35mm
B Fibre concrete plug 40mm

➤ Evenly distribute the mortar mixture in the conical opening and then slowly press the fibre-concrete plug into the opening while gently turning it. (Using a piece of wood makes it easier to fit the plug on the right plane).

Fibre concrete plugs

A Fibre concrete plug 35mm
B Fibre concrete plug 40mm

➤ Evenly distribute the mortar mixture in the conical opening and then slowly press the fibre-concrete cone into the opening while gently turning it. (Using a piece of wood makes it easier to fit the plug on the right plane).

Fit a fibre concrete plug into the opposite side of the wall.
**Form-tie system 20.0**

- for wall thicknesses of over 30 cm
- can be operated on one or both sides

**Tie-rod 20.0mm:**
Permitted capacity, allowing a 1.6 : 1 factor of safety against failure: 220 kN
Permitted capacity to DIN 18216: 150 kN

➤ Only use approved tie-rods
➤ Never weld or heat tie-rods

The **Dokaset tie-hole reducer 20.0** makes it possible to use the Form-tie system 20.0.

**Watertight form-tie points using a water-stop**

![Diagram of watertight form-tie points using a water-stop]

1. Undo the screws on the integral tying component.
2. Fasten the integral tying component in the bottom holes on the Dokaset waling (stand-by position).
3. Bolt the Dokaset tie-hole reducer 20.0 to the Dokaset waling.

To make it possible to operate the form-tie from both sides, the integral tying component must be replaced with the Dokaset tie-hole reducer 20.0.

- Wall thickness min. 40 cm

**Watertight form-tie points using a fibre-concrete tube**

![Diagram of watertight form-tie points using a fibre-concrete tube]

- Wall thickness min. 40 cm

**Steps:**
1. Undo the screws on the integral tying component.
2. Fasten the integral tying component in the bottom holes on the Dokaset waling (stand-by position).
3. Bolt the Dokaset tie-hole reducer 20.0 to the Dokaset waling.

**Material:**
- Fibre-concrete tube d27 ("Frank" product name)
- Cone d27 ("Frank" product name)
Platform system

Unfolding the platform

➤ Tilt up the **rear railings** by 90°. They lock into place automatically.

➤ Pivot both **side railings** into the desired position, as required by the usage situation. Locking is in 45° steps.

➤ Take out the **two top platform bolts**.

➤ Tilt up the **platform** by 90°.

To make it easier to tilt up the platform:
Insert a round steel bar into the shaped tube of the platform. In this way, 2 men can easily tilt up the entire platform without any great physical effort.

➤ Fix the platform again with both **platform bolts**, and secure these with linch pins.

➤ When raising a 2.70x2.70m panel, it is OK to pass the 2-part chain across the sturdy rear railings.

Extending the end-of-platform sideguards
The end-of-platform sideguards can be extended with the built-in **handrail lengthening piece**.

a ... can be telescoped to 14 or 32 cm

A **Integral handrail lengthening piece**

B **Linch pin**
Extending the platform to either side

The platform can be lengthened by up to 0.55 m on either side using the Xsafe platform extension 0.55m.

How to attach the platform extension:

1) Take out the fastening bolt.
2) Pull out the locking mechanism.
3) Pull out the whole swivel unit (incl. railing).

The swivel unit can now be mounted on the other side, in reverse order.
Front (opposing) guard-rail

The Dokaset counter railing can be used to set up front (formwork-side) opposing guard-rails. It can be operated (lowered / raised) both from below and from on the platform itself.

How to mount:

➤ Mount Dokaset counter railing holders to the top walling profile of the Dokaset panel.
➤ Insert the Dokaset counter railing into the Dokaset counter railing holders.

Shown here without the platform.

A  Dokaset counter railing
B  Dokaset counter railing holder

If the Dokaset counter railing is not needed, it can simply be pushed down out of the way.

Lowering / raising the Dokaset counter railing:

The Dokaset counter railing is operated either by the lever (top) or the handrail-post upright (bottom).
➤ Slightly raise the Dokaset counter railing.
➤ Twist the lever / handrail-post upright 45° to unlock the Dokaset counter railing.
➤ Lower the Dokaset counter railing or raise it to the same level as the platform railings.
➤ Twist the lever / handrail-post upright back 45° to lock the Dokaset counter railing again.

Check whether properly locked:

● The railing bolt must engage in the notch of the counter railing holder.
Ladder system

Ladders can be attached to all Dokaset panels with platforms. As a rule, every gang-form is provided with one ladder.

Mounting the ladders

➤ Hook a Dokaset ladder 2.70m into the ladder holder on the platform.

To protect the ladder when the gang-form is lifted:

➤ Fasten the ladder-fixing brace to a higher position on the panel – this pulls the ladder inwards.

The locking plate prevents the ladder being accidentally unhooked.

The ladder can be fixed on either the left-hand or right-hand side of the platform.

➤ Remount the ladder holder to the side that you want to fix the ladder to.
Opposing guard-rails

Dokaset railing holders and Handrail posts 1.00m are used for setting up safe opposing guard-rails.

There are two possible mounting situations for the Dokaset railing holder, depending on the mounting position of the Dokaset head anchor.

**Variant 1 - Head anchor on the opposing formwork**

➤ Jointly bolt the Dokaset railing holder and head anchor into the hole in the waling, and secure the bolts.

**Variant 2 - Head anchor on the platform side**

➤ Bolt the Dokaset railing holder directly into the hole in the waling, and secure the bolts.

Note:
When choosing which Dokaset railing holder to use, you must comply with national safety regulations regarding the maximum angle allowed for the railings.
Notes
Gang-forms

For lifting and resetting, it is usual to assemble larger units (gangs) from Dokaset panels.
Max. width of the gang-forms: 5.40 m

Equipment needed for one 5.40 m wide gang-form with a platform:

<table>
<thead>
<tr>
<th>Designation</th>
<th>No. of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dokaset panel 2.70x2.70m with platform</td>
<td>2</td>
</tr>
<tr>
<td>Dokaset ladder 2.70m</td>
<td>1</td>
</tr>
<tr>
<td>Panel strut 340</td>
<td>2</td>
</tr>
<tr>
<td>Framax quick-acting clamp RU</td>
<td>3</td>
</tr>
<tr>
<td>Framax universal wailing 0.90m</td>
<td>1</td>
</tr>
<tr>
<td>Framax wedge clamp</td>
<td>2</td>
</tr>
<tr>
<td>Dokaset 2-part chain 1.50m</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total weight:</strong></td>
<td><strong>2240 kg</strong></td>
</tr>
</tbody>
</table>

Equipment needed for one 5.40 m wide gang-form with no platform:

<table>
<thead>
<tr>
<th>Designation</th>
<th>No. of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dokaset panel 2.70x2.70m</td>
<td>2</td>
</tr>
<tr>
<td>Panel strut 340</td>
<td>2</td>
</tr>
<tr>
<td>Framax quick-acting clamp RU</td>
<td>3</td>
</tr>
<tr>
<td>Framax universal wailing 0.90m</td>
<td>1</td>
</tr>
<tr>
<td>Framax wedge clamp</td>
<td>2</td>
</tr>
<tr>
<td>Dokaset 2-part chain 1.50m</td>
<td>1</td>
</tr>
<tr>
<td>Dokaset railing holder</td>
<td>4</td>
</tr>
<tr>
<td>Handrail post 1.00m</td>
<td>4</td>
</tr>
<tr>
<td>Dokaset head anchor 12-36cm</td>
<td>4</td>
</tr>
<tr>
<td>Guard-rail boards (site-provided)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total weight:</strong></td>
<td><strong>1800 kg</strong></td>
</tr>
</tbody>
</table>

Joining the panels to make gang-forms

The connector components are mounted to the panels when these are still face-down on the assembly bench.

Framax quick-acting clamp RU
The Framax quick-acting clamp RU provides a self-aligning, tension-proof link.

How to mount:

Place the Quick-acting clamp RU over the panel joint and fix tightly by hitting the wedge with a hammer (formwork hammer max. 800 g).
The panel joint is now tight.

See "Vertical stacking" for instructions on where to position the Framax quick-acting clamps RU.

Framax universal waling
To provide additional stiffening of large gangs, a Framax universal waling 0.90m should be attached roughly half-way up the gang.

Joining the gang-form to adjoining gangs

Use 3 Quick-acting clamps RU per 2.77m of panel height to join the gangs.
Lifting chain

Every gang-form is equipped with a Dokaset 2-part chain 1.50m. This stays attached to the gang throughout the forming assignment.

The advantage of this is much greater safety:
- The operators can attach the gangs to the crane while working from ground level.

Close-up showing how/where the chain is attached to the waling:

Note:
The chain can be attached to either side of the U 240 waling.

Max. load:
2000 kg on each bolt of the Dokaset waling

➤ Use the right slinging points! (Always attach the 2-part chain to the inside bolts of the unit to be lifted)

Single 2.70 m panel:

5.40 m gang (2 x 2.70 m):

1.35 m panel:
Vertical stacking of panels

The following information is given for each of the gang-forms mentioned below:
- position of the panel connectors
- position of the form-ties

Panel width 2.70 m

Formwork height: 307 cm, 322 cm, 337 cm

The form-ties across the top of the formwork are tension/pressure ties.

Formwork height: 367 to 412 cm
Panel width 1.35 m

Example with a formwork height of: 412 cm

When this configuration is used at the end of a gang-form (e.g. for stop-ends, wall junctions, etc.) extra form-ties must be fitted in the frame profile here.

As a rule, do not locate 1.35 m wide panels next to one another, as this would necessitate an extra form-tie.

A  Dokaset tension tie 10-30cm
B  Tie-rod 15.0mm + Super-plate 15.0
C  Framax universal waling 1.50m
D  Framax quick-acting clamp RU
E  Framax wedge clamp
Plumbing accessories

Panel struts 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 Doka Calculation Guide.

Number of struts per 5.40 m width of gang-form:

<table>
<thead>
<tr>
<th>Formwork height [m]</th>
<th>Panel strut 340</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 4.12</td>
<td>2</td>
</tr>
<tr>
<td>Max. anchoring load: $F_k = 13.5 \text{ kN}$ ($R_d = 20.3 \text{ kN}$)</td>
<td></td>
</tr>
</tbody>
</table>

The values apply where the wind pressure $w_u = 0.65 \text{ kN/m}^2$. In cases where higher wind pressure is encountered, the number of props must be determined by statical calculation.

Note:
Every gang-form must be supported by at least 2 panel struts.

Fixing to the ground
Anchoring the plumbing accessories in such a way as to resist tensile and compressive forces!

Drilled holes in the footplates

<table>
<thead>
<tr>
<th>Panel strut 340</th>
</tr>
</thead>
<tbody>
<tr>
<td>a ... diam. 26 mm</td>
</tr>
<tr>
<td>b ... diam. 18 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 ($f_{ck,cube}$): min. 25 N/mm$^2$ or 250 kg/cm$^2$ (C20/25 grade concrete)

Follow the Fitting Instructions!
Panel strut 340

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)

\[ a \ldots 193.0 - 340.9 \text{ cm} \]
\[ b \ldots 114.9 - 165.4 \text{ cm} \]
Length adjustment using closures

with Framax Xlife panel

Example: Symmetrical gang-form, 6.00 m wide
Distribution of panels: 2.70 - 0.60 - 2.70 m

with fitting timber and Framax multi function clamp

Combining Dokaset with Framax Xlife makes various different closure options possible.

Example:
Closure with fitting-timber and Framax universal waling – up to 15 cm

A Framax Xlife panel 0.60m
B Framax quick-acting clamp RU
C Framax universal waling 1.50m + Framax wedge clamps
D Xsafe platform extension 0.55m
E Guard-rail boards

A Framax multi-function clamp
B Framax fitting-timber
C Framax universal waling
D Framax wedge clamp
E Framax Xlife panel (max. width 60 cm)
F Dokaset panel
Stop-end formwork

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

A Framax universal waling
B Framax universal fixing bolt + Super-plate 15.0
C Squared timber
D Formwork sheet
E Dokaset panel

Universal waling:
permitted moment: 5.2 kNm

Framax universal fixing bolt:
Permitted tensile force in the transverse sleeve: 25.0 kN
90 degree corners

with Dokaset outside corner 3.30m

Up to a wall thickness of 30 cm, no form-ties are needed in corners where the Dokaset outside corner 3.30m is used.

Close-up of "Dokaset bottom angle for inside corner":

A Framax Xlife inside corner
B Dokaset bottom angle for inside corner
C Hexagon screw M20 (width-across: 30 mm)

N° of clamps needed on Dokaset outside corner:

<table>
<thead>
<tr>
<th>Pour-height</th>
<th>N° of Framax quick-acting clamps RU or Framax multi-function clamps</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.70 m</td>
<td>10</td>
</tr>
<tr>
<td>3.30 m</td>
<td>12</td>
</tr>
</tbody>
</table>

When lifting and resetting the Dokaset outside corner (with the Dokaset 2-part chain 1.50m), use the integrated slinging points.
Example with a wall thickness of 20 cm

Example with a wall thickness of 25 cm

Example with a wall thickness of 30 cm

Dokaset outside corner:
Number and position of universal walings or clamps

A Dokaset outside corner 3.30m
B Framax Xlife inside corner
C Dokaset panel 1.35x2.70m
D Dokaset panel 2.70x2.70m with platform
E Xsafe platform extension 0.55m
F Framax multi-function clamp
G Framax quick-acting clamp RU
H Framax fitting-timber 10cm
I Framax fitting-timber 5cm
J Framax universal waling 0.90m
K Framax wedge clamp
**Dokaset outside corner in conjunction with Framax Xlife**

The Dokaset outside corner 3.30m can also be used on Doka framed formwork Framax Xlife.

Follow the directions in the "Doka framed formwork Framax Xlife" User Information!

---

**Preparations for combining the Dokaset outside corner with Framax Xlife:**

- Remove the bottom angle from the Dokaset outside corner.
  - Spanner size (width-across): 30 mm
  - **Temporarily fix the bottom angle to another position on the outside corner.**
    - The bottom angle can be fastened onto the top frame profile.

---

**Example with a wall thickness of 25 cm**

![Diagram](image_url)
Transporting, stacking and storing

Transporting the panels

**Doka 4-part chain 3.20m**

The Doka 4-part chain 3.20m is used for separating the Dokaset panels. Its centre-of-gravity position can be adjusted by shortening the individual lengths of chain.

➤ Attach the Doka 4-part chain 3.20m to the bolts in the Dokaset walings. The bolts must be secured by linch pins.

**Max. load P_{max}:**

<table>
<thead>
<tr>
<th>Spread-angle $\beta$</th>
<th>0°</th>
<th>0°-30°</th>
<th>30°-45°</th>
<th>45°-60°</th>
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<tr>
<td>Using 1 chain</td>
<td>1400 kg</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Using 2 chains</td>
<td>-</td>
<td>2400 kg</td>
<td>2000 kg</td>
<td>1400 kg</td>
</tr>
<tr>
<td>Using all 4 chains</td>
<td>-</td>
<td>3600 kg</td>
<td>3000 kg</td>
<td>2120 kg</td>
</tr>
</tbody>
</table>

Follow the directions in the Operating Instructions!

Forklift truck

The integrated stacker brackets on the Dokaset panels allow them to be handled by forklift truck.

Note:

Load the truck in such a way that it can be unloaded using a forklift truck (stacker brackets).
Stacking the panels

Stacking shoes are captively integrated in the Dokaset panels. These stacking shoes have protective covers so that the Xlife sheet does not get damaged when the panels are stacked.

**Bottom stacking shoe:**

- Clean the protective covers before stacking the panels.
- The stacking shoes of the Dokaset panels must be arranged exactly above one another when the panels are stacked.

**Top stacking shoe:**

<table>
<thead>
<tr>
<th>Panel Description</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>N° of Panels</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.70x2.70m panel with platform</td>
<td>49</td>
<td>245</td>
<td>270</td>
<td>282</td>
<td>5</td>
</tr>
<tr>
<td>2.70x2.70m panel</td>
<td>41</td>
<td>247</td>
<td>270</td>
<td>282</td>
<td>6</td>
</tr>
<tr>
<td>1.35x2.70m panel with platform</td>
<td>49</td>
<td>245</td>
<td>135</td>
<td>282</td>
<td>5</td>
</tr>
<tr>
<td>1.35x2.70m panel</td>
<td>38</td>
<td>228</td>
<td>135</td>
<td>282</td>
<td>6</td>
</tr>
</tbody>
</table>
Cleaning and care of your equipment

The special coating on the Xlife sheet greatly reduces the amount of cleaning that is needed.

Cleaning

Immediately after pouring
➤ Remove any blobs of concrete from the back-face of the formwork, using water (without any added sand).

Immediately after striking the formwork
➤ Clean the formwork with a high-pressure spray cleaner and a scraper.

Cleaning equipment

High-pressure spray cleaner
The special coating of the Xlife sheet also makes it possible for the sheet to be cleaned with a high-pressure spray cleaner.

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

Cleaning equipment

High-pressure spray cleaner

Observe the following points:
● Appliance pressure rating: 200 to max. 300 bar
● Keep the water-jet the correct distance from the formwork, and move it at the right speed:
  - The higher the pressure, the further away from the formwork you must keep the jet and the faster you must move it across the surface.
● Make only moderate use of the jet around the silicone sealing strip:
  - If the pressure is too high, this will damage the silicone sealing strip.
  - Do not aim the jet at one place for too long.

Concrete scraper

Functional description:

Note:
Do not use any pointed or sharp objects, wire brushes, rotating grinding disks or pan scourers.

Release agents

Before every pour
➤ Apply release agent to the formwork sheet and the end faces extremely thinly, evenly and in a continuous layer (make sure there are no traces of release-agent running down the formwork sheet)! Applying too much release agent will spoil the concrete finish.

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

- No hammer-blows to the frame profiles

- Do not use nails on the formwork that are longer than 60 mm

A max. l=60 mm
Tipos-Doka helps you to form even more efficiently

Tipos has been developed to assist you in planning the use of your Doka formwork. For wall formwork, floor formwork and platforms, it puts the same tools into your hands that we at Doka use ourselves for formwork planning.

Easy to use, fast and accurate results

The easy-to-use interface makes for very fast working. From when you input your layout (with the “Schal-Igel”® on-screen assistant), all the way through to when you manually put the finishing touches to the formwork solution the program gives you. All this saves time - yours.

The program contains a large number of templates from formwork practice, so you can be sure of always getting the optimum technical and economical solution to your formwork task. This makes for greater operational reliability, and cuts costs.

You can get to work right away with the piece-lists, plans, views, sections and perspective drawings that the program gives you. Operational reliability is also enhanced by the high level of detail of the plans.

Among other things, Tipos-Doka plans the following with Dokaset:

- Distribution of the framed formwork panels
- Any vertically stacked configurations that are needed
- Closures and accessories
- Pouring platforms, safety railings etc.

Drawings of formwork and platforms really can be this detailed! Both for the layout and for spatial representations, Tipos-Doka sets an impressive new standard of visual presentation.

Always the right quantities of formwork and accessories

You can import the automatically generated piece-lists into many other programs for further processing.

Formwork components and accessories that have to be organised at short notice, or replaced by improvisation, are the ones that cost the most. This is why Tipos-Doka offers complete piece-lists that leave no room for improvisation. Planning with Tipos-Doka eliminates costs before they have a chance to even arise. And your depot can make the best possible use of its stocks.
Doka service offerings

Doka Reconditioning Service

So that your formwork is in "top form" for its next assignment

Inspecting, cleaning and maintaining your Dokaset – all jobs which the Doka Reconditioning Service will be pleased to take care of for you. Its highly qualified staff and special equipment will soon get your formwork back in top form, quickly and economically.

The advantage for you: You always have formwork that is ready for use, and also extend the service life of your equipment.

What's more: It is only with well-maintained formwork that you will achieve the desired quality of concrete surface.

In our modern plants, your formwork will be carefully cleaned using energy-saving and environmentally sound technology.

The panels are then inspected for damage and dimensional accuracy and overhauled where necessary. Any damaged form-facing is repaired, or - if necessary - replaced.

Doka customer training

Formwork training pays

Forming operations account for the lion’s share of labour costs on concrete construction sites. Modern formwork equipment helps to rationalise operations. By improving the overall construction sequence at the same time, however, further very worthwhile gains in efficiency can be achieved.

This requires not only better equipment, but also greater skill in making optimum use of this equipment. Doka can help here, with its specialist training programme - to help each and every member of the team do his bit towards boosting efficiency and lowering costs.

Doka customer training events also look at the formwork equipment and handling methods that are needed in order to achieve optimum safety - knowledge and awareness which can only enhance workplace safety on the site.

You’ll find the Doka training programme well worth looking into.

Your nearest Doka branch will be pleased to tell you more about Doka’s various training offerings.
## Component overview

<table>
<thead>
<tr>
<th>Article n°</th>
<th>Article n°</th>
</tr>
</thead>
<tbody>
<tr>
<td>588900000</td>
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<td>588901000</td>
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</tr>
<tr>
<td>588907000</td>
<td>588918000</td>
</tr>
</tbody>
</table>

### Dokaset Panel

- **Dokaset panel 2.70x2.70m**
  - 835.0 kg
  - Article n°: 588900000
  - Galvanised
  - Height: 282 cm

- **Dokaset panel 2.70x2.70m with platform**
  - 986.0 kg
  - Article n°: 588901000
  - Galvanised
  - Height: 282 cm
  - Delivery condition: folded closed

- **Dokaset panel 1.35x2.70m**
  - 454.0 kg
  - Article n°: 588902000
  - Galvanised, powder-coated
  - Height: 282 cm

- **Dokaset panel 1.35x2.70m with platform**
  - 538.0 kg
  - Article n°: 588903000
  - Galvanised, powder-coated
  - Height: 282 cm
  - Delivery condition: folded closed

### Xsafe Platform Extension

- **Xsafe platform extension 0.55m**
  - 41.0 kg
  - Article n°: 587734000
  - Timber parts varnished yellow
  - Steel parts galvanised

### Dokaset Outside Corner

- **Dokaset outside corner 3.30m**
  - 283.0 kg
  - Article n°: 588914000
  - Galvanised

### Dokaset Bottom Angle for Inside Corner

- **Dokaset bottom angle for inside corner**
  - 7.9 kg
  - Article n°: 588913000
  - Galvanised
  - Height: 7.5 cm

### Dokaset Counter Railing Holder

- **Dokaset counter railing holder**
  - 4.0 kg
  - Article n°: 588912000
  - Length: 31 cm

### Dokaset Counter Railing

- **Dokaset counter railing 2.70m**
  - 21.0 kg
  - Article n°: 588741000
  - Galvanised, powder-coated
  - Height: 183 cm

- **Dokaset counter railing 1.35m**
  - 15.0 kg
  - Article n°: 588742000
  - Galvanised
  - Height: 183 cm

### Handrail Post

- **Handrail post 1.00m**
  - 3.8 kg
  - Article n°: 584335000
  - Galvanised
  - Length: 124 cm

### Dokaset Head Anchor

- **Dokaset head anchor 12-36cm**
  - 4.7 kg
  - Article n°: 588905000
  - Galvanised, powder-coated
  - Length: 47 - 71 cm

---

*Galvanised, powder-coated*

*Height: 282 cm*

*Height: 282 cm*

*Height: 282 cm*

*Height: 282 cm*

*Height: 282 cm*

*Height: 282 cm*

*Height: 282 cm*

*Height: 282 cm*

*Height: 7.5 cm*

*Height: 282 cm*

*Height: 282 cm*

*Height: 282 cm*

*Height: 282 cm*

*Height: 7.5 cm*

*Height: 282 cm*

*Height: 282 cm*

*Height: 282 cm*

*Height: 282 cm*

*Height: 282 cm*

*Height: 282 cm*

*Height: 282 cm*

*Height: 282 cm*

*Height: 282 cm*
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### Dokaset Component overview

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</tr>
<tr>
<td>588158000</td>
<td>588620000</td>
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</table>

### Panel strut 340
Elementstütze 340 consisting of:

- **(A) Prop head**
  - 2 pcs.
  - Galvanised
  - Length: 40.8 cm
  - Width: 11.8 cm
  - Height: 17.6 cm

- **(B) Prop shoe**
  - Galvanised
  - Length: 20 cm
  - Width: 11 cm
  - Height: 10 cm

- **(C) Plumbing strut 340**
  - Galvanised
  - Length: 190 - 341 cm

- **(D) Adjusting strut 120**
  - Galvanised
  - Length: 80 - 130 cm

Observe all applicable safety regulations.

### Framax universal waling holder
Dokaset-Klemmschienenhalter

<table>
<thead>
<tr>
<th>Article n°</th>
<th>Article n°</th>
</tr>
</thead>
<tbody>
<tr>
<td>588244000</td>
<td>588245000</td>
</tr>
<tr>
<td>588247000</td>
<td>588248000</td>
</tr>
</tbody>
</table>

### Dokaset tension tie 10-30cm
Dokaset-Zuganker 10-30cm

- Galvanised
- Length: 115 cm
- Permitted capacity, allowing a 1.6 : 1 factor of safety against failure: 220 kN
- Perm. capacity to DIN 18216: 150 kN

### Dokaset ratchet 3/4" SW36
Dokaset-Knarre 3/4" SW36

- Galvanised
- Length: 100 cm

### Dokaset tie hole reducer 20.0
Dokaset-Ankerlochreduktion 20.0

- Galvanised
- Length: 20 cm

### Framax quick acting clamp RU
Framax-Schnellspanner RU

- Galvanised
- Length: 20 cm

### Framax multi function clamp
Framax-Uni-Spanner

- Galvanised
- Length: 40 cm

### Framax universal waling 0.90m
Framax-Klemmschiene

- Painted blue

### Framax universal waling 1.50m
Framax-Klemmschiene

### Framax wedge clamp
Framax-Spannklemme

- Galvanised
- Length: 21 cm

### Dokaset universal waling holder
Dokaset-Klemmschienenhalter

- Galvanised
- Length: 24.5 cm

### Framax universal fixing bolt 10-16cm
Framax-Universalverbinder 10-16cm

- Galvanised
- Length: 26 cm

### Framax universal waling

- Consisting of:
  - **(A)** Prop head
    - 2 pcs.
    - Galvanised
    - Length: 40.8 cm
    - Width: 11.8 cm
    - Height: 17.6 cm

- **(B)** Prop shoe
  - Galvanised
  - Length: 20 cm
  - Width: 11 cm
  - Height: 10 cm

- **(C)** Plumbing strut 340
  - Galvanised
  - Length: 190 - 341 cm

- **(D)** Adjusting strut 120
  - Galvanised
  - Length: 80 - 130 cm

Observe all applicable safety regulations.

### Framax quick acting clamp RU
Framax-Schnellspanner RU

- Galvanised
- Length: 20 cm

### Framax universal waling 0.90m
Framax-Klemmschiene

- Painted blue

### Framax universal waling 1.50m
Framax-Klemmschiene

### Framax wedge clamp
Framax-Spannklemme

- Galvanised
- Length: 21 cm

### Dokaset universal waling holder
Dokaset-Klemmschienenhalter

- Galvanised
- Length: 24.5 cm

### Framax universal fixing bolt 10-16cm
Framax-Universalverbinder 10-16cm

- Galvanised
- Length: 26 cm
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## Form tie system 20.0

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### Permitted capacity, allowing a 1.6 : 1 factor of safety against failure: 220 kN

Permission to DIN 18216: 150 kN

Breaking load: > rod breaking load (> 354 kN)

_**Never weld or heat tie-rods - risk of fracture!**_

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### Super plate 20.0 B

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Galvanised

Height: 7 cm

Diameter: 14 cm

Width across: 34 mm

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

Permission to DIN 18216: 150 kN

Breaking load: > rod breaking load (> 354 kN)

---

### Plastic tube 26mm 2.00m

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<th>Article n°</th>
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Kunststoffrohr 26mm 2.00m

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### Universal cone 26mm

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Grey

Diameter: 5 cm

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### Plug 26mm

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Verschlusstopfen 26mm

Grey
Dokaset – the all-in-one wall formwork for the demanding user

Dokaset's completely pre-assembled units make very quick – and safe – work of all forming operations. Dokaset is highly durable, service-friendly and cost-effective. This is ensured by its hot-dip galvanised steel frames and the new Framax Xlife form-facing. Dokaset is interoperable with many of the components of the Framax Xlife system.

Dokaset is available for rental, leasing or purchase. At any of the Doka branches in your region.

Why not give us a call?

The Doka Group's central plant at Amstetten, Austria