## Understanding how to optimise the construction process with services Boost your efficiency with the services offering from Doka

doka

# Active project support right from the word 'go'.

Every single project is unique and calls for individualised solutions. When it comes to the forming operations, the Doka team can help you with its consulting, planning and ancillary services in the field, enabling you to carry out your project effectively, safely and reliably. Turning ideas into 'concrete' projects, plans into structures, and products and services into made-to-measures solutions.



## The combination of the right formwork and the matching services ensures the success of your project

- Smooth progress ensured by products and services from a single source

- Competent support from planning through to assembly directly on site.

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Important notice: Always observe all relevant safety regulations (e.g. as issued by construction-industry employee safety organisations) applying to the use of our products in the country in which you are operating. In addition, the User Information booklets (Instructions for Assembly and Use), which contain information on standard system set-up and on compliant utilisation of Doka formwork systems, must also be observed. The illustrations in this brochure show the situation during formwork assembly and are therefore incomplete from the safety aspect. It could be dangerous to combine our formwork equipment with equipment from other manufacturers. If you intend combining different systems, please contact Doka for advice first. Subject to change without notice in the course of technological development. © Copyright by Doka GmbH

## \_Understanding engineering: Efficient planning for a safe project sequence

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

#### **Building Information Modelling (BIM)**

- provision of a 3D formwork model in ifc format
- use in or preparation of a common data environment (CDE) for joint project processing
- simulation and visualisation of complex formworking sequences (from simple renderings and animations through to 3D printing and augmented reality (AR))

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 optimisation of your construction processes through materials management, logistics solutions for formwork planning, model analysis and quality assurance

#### Structure modelling/3D-planning

On the basis of the existing data, a computer-aided 3D model of parts of the structure and/or the formwork mould is created. This can be the starting point for further planning and production of custom formwork. Scope of service, e.g.:

- Analysis of the structure on the basis of the existing data (3D data, 2D plans, etc.)
- Computer generation of a 3D model for the structure and/or a formwork mould
- Mapping of the formwork mould for production planning, execution planning and assembly planning



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Engineered by Doka.



#### **Execution planning**

The execution planning stage is used to create the plans approved for construction. They contain the necessary data for implementing the formwork solution and are created in 2D and, if required, in 3D in accordance with applicable standards and regulations. Scope of service, e.g.:

- Positioning of the formwork in relation to the structure and construction joints
- Sizes for formwork material including closure sizes, extension lengths, spacing, secondary beams, etc.
- Naming of the major formwork components (formwork unit, special parts, pre-assembled units, etc.)

#### **Cycle planning**

When the cycles are planned the pertinent execution plans are created taking into account all specified pouring cycles. Scope of service, e.g.:

- Analysis of the defined cycles in relation to complexity and size (m<sup>2</sup> of formwork surface area)
- Optimisation of the formwork quantity (material list)
- Creation of the plans for all predefined cycles, with possible repositioning units taken into account

#### **Assembly drawings**

The assembly drawings created and approved by Doka provide you with the detailed arrangement of individual parts for a self-preassembled, fixed formwork unit. Scope of service, e.g.:

- Bills of quantities of the Doka items and consumables needed, including all the necessary information about the material (e.g. surface finish, quality)
- Necessary sizes, check sizes and labelling, including views and details
- Maximum dimensions, weight for organisation of transport and necessary crane capacities

#### **Static calculation**

Project-specific static calculations ensure stability and the suitability of the individual formwork units for the intended use. Depending on need, these calculations range from a simple project statics to exact dimensioning to local standards including documentation (structural analysis) through to certification that they were checked by a civil or testing engineer (verified structural analysis). Scope of service, e.g.:

- Statical certainty for deployment of the formwork
- Compliance with statutory provisions
- Consultation with the test engineer is undertaken by Doka

## \_Understanding consulting: Project support from start to finish

Doka helps you optimise progress in every project phase with individual consulting services and made-to-measure training offerings.



#### **Project processing on-site**

On-site support for the construction site by an experienced Doka specialist for reliable provision of the agreed commercial, technical and logistics services.

- More safety during construction operations with 'on-the-job' formwork planning
- On-site consultation whenever special requirements arise
- Direct contact for support concerning use of the formwork
- Spotlight on potential improvements for future projects



#### **Formwork instructor**

The Doka Formwork Instructor is a specially trained and experienced practitioner on the site. He provides the site crew with support in efficient and safe formwork use on the construction site. This ensures that you make the best possible use of resources, and that construction moves ahead efficiently.

- Productivity boosted by professional familiarisation training given to the site crew
- Plan discussion and clarification of the assembly procedure
- Advice on standard deployment and special deployment







#### **Training & consulting**

Doka offer you detailed product and system training for Doka formwork material and services, along with made-to-measure training on special subjects. The courses are held in the Doka branch or on your premises, on request. Scope of service, e.g.:

- A wide range of subjects is covered (structural engineering, climbing formwork, fair-faced concrete, etc.)
- Provision of Doka seminar rooms or organisation of suitable premises
- Tour of the Doka Forum or inspection of equipment samples (exhibition of Doka products)
- Practical drills in the Doka Training Centre or in a training zone, using Doka material
- Issue of a certificate of course attendance

## \_Understanding processes: Use the tools from Doka to optimise construction processes

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

#### **Online Shop**

Buy formwork systems, formwork components and formwork accessories easily and conveniently online.

- efficient product searches and individual watch lists help you to get the formwork you need quickly.
- call up the latest information on availability, delivery times and delivery costs directly online
- individual price agreements, discounts and framework contracts are all taken into account





#### myDoka

The myDoka customer portal provides instant access to the inventory and transaction data of all jobsites in real time. Optimised for desktop and mobile devices, all functionalities of the portal can be accessed regardless of time and location, on smartphones, tablets or PCs. The user interface is user-friendly, facilitating intuitive and easy navigation.

- efficient planning and control of formwork quantities
- supports controlling tasks with project-specific evaluations
- efficiently obtain all information required by Intuitive navigation
- data can be exported in various formats to facilitate further processing
- uploads and downloads for fast, paperless exchange of project data
- controlled access to project data by pre-defined user groups
- secure handling of confidential data encrypted access with user name and password



#### Doka formwork design software

Easier planning with Doka formwork design software 9. With Doka formwork design software, Doka offers a complete package for optimised formwork planning on your site.

- DokaCAD 9 for AutoCAD
- Tipos 9
- Piecelist Editor 9
- Beam Statics 9





#### Doka apps

#### Doka Manuals

Doka Manuals give you fast, easy access to technical information about Doka formwork solutions at any time.

#### Doka Tools

Doka Tools enable you plan wall and floor formwork, optimise the components for Dokaflex floor-slab formwork in seconds, and work out the permitted rate of placing and the maximum fresh-concrete pressure during pouring.

#### Doka Augmented and Virtual Reality

Among others the Doka AR-VR app lets you enhance selected 2D plans with interactive 3D models.

#### Easy Formwork Planner

The Easy Formwork Planner lets you digitise structure data on a smartphone or tablet PC. The automatic formwork planning gives you a 3D model of the formwork and a bill of materials listing all the items you need.



Download

all apps at:

www.doka.com/apps

#### Concremote

The method for optimisation of your construction project. With Concremote you can plan your construction project better and no matter where you are you have round-the-clock access to your real-time data. So you can gauge concrete performance and initiate the necessary measures at exactly the right time.

#### The advantages for you:

- save time
- increase safety
- enhance concrete quality
- reduce costs

## \_Understanding individuality: With Doka's Pre-assembly service and Pre-assembly on site service

Special factors and structural requirements frequently call for an individualised approach. To complement its system formwork range, Doka offers customised formwork units. Specially trained Doka personnel also erect load-bearing towers and formwork units directly on site.



#### **Pre-assembly service**

Doka offers made-to-measure custom formwork adapted to the specific set of project requirements. Formwork from simple through to complex designs, pre-assembled to specification in the Doka Preassembly Service centres. Disassembly and professional disposal of non-reusable materials are also services available on request.

- Less assembly work and less space needed on your construction site
- · Perfect-fit pre-assembly speeds up progress on the build
- Reliable completion dates with improved concreting results



#### **Pre-assembly on site**

Specially trained assembly work on site. Heavy-duty supporting systems, forming wagons, windshields, climbing formwork and so on are professionally and reliably assembled, moved and disassembled in accordance with the predefined, contractually agreed scope of service:

Pre-assembly on site

- Certainty regarding costs of formwork assembly, based on ample experience
- Pre-arranged price even for unusual scopes of work
- Assembly teams are flexible, so completion dates are reliable

## \_Understanding the importance of deadlines: Logistics network for fast global availability

Formwork availability is a crucial factor in realising your project on time and on budget. The worldwide logistics network lets you simply call up the formwork quantities. The materials are delivered on schedule, as arranged. doka



• Organisation of transport

Logistics

#### **Organisation of transport & freight**

Doka supplies the formwork systems, taking into consideration the permissible dimensions and weights in accordance with the applicable national transport regulations and statutes. Cargo space calculation and route planning are handled reliably and with appropriate lead times; the material is transported to and removed from the construction site as scheduled.

- Delivery and return delivery
- Special shipment (including obtaining official permits)
- Express delivery (e.g. within 48 hours)

## \_Understanding quality: Rental and reconditioning service

Doka holds stocks of formwork material in rental parks so that customers can rent the material needed for specific projects. Doka Reconditioning cleans and overhauls both client-owned equipment and Doka rental equipment. Doka formwork material that can no longer be re-used or repaired is sorted out and diverted to a professional recycling and disposal process.

#### **Reconditioning & flat-rate service**

Client-owned equipment and Doka rental formwork is cleaned and overhauled to Doka quality standards, and restored to perfect condition. All necessary repairs are carried out and replacement parts properly installed. This extends the lifespan and ensures safety and reliability for the next formwork assignment.

- Professional cleaning and reconditioning extend product lifespan
- Unified quality standards make for dependability regarding the concrete finish
- Well-maintained and properly functioning equipment saves time and cuts costs
- Costing certainty with fixed-rate billing

#### **Overview of Doka Service rates**



try	Service level	Cleaning & refurbish- ment plus	Cleaning plus	Cleaning	By site (construc- tion contractor)
	<ul> <li>Full cleaning</li> <li>regardless of degree of soiling</li> <li>incl. all direct-labour work such as drilling out tie-holes</li> </ul>	✓	$\checkmark$	✓	-
Services at defined rates per country (Doka Germany as an example)	<ul> <li>Reconditioning of formwork sheeting</li> <li>with patches or sheeting strips</li> <li>incl. all direct-labour work such as silicone grouting</li> </ul>	✓	$\checkmark$	-	-
<b>ed rate:</b> ny as an ex	<ul> <li>Including all changes of form-facing</li> <li>e.g. replacement sheets, assembly and dismantling work</li> </ul>	$\checkmark$	-	-	-
<b>at defined rates pe</b> (Doka Germany as an example)	<ul> <li>Including all spare parts</li> <li>e.g. prop heads, replacement profiles and cross profiles of framed formwork panels</li> </ul>	$\checkmark$	-	-	-
ices a	Including all welding work • e.g. welding and regalvanising panel frames	$\checkmark$	-	-	-
Serv	Including all straightening work • on panels and accessories	$\checkmark$	-	-	-
	Including all damage to the end-reinforce- ments of H20 beams	$\checkmark$	-	-	-
	Including all additional repairs and direct- labour work • as per current services price list	$\checkmark$	-	-	-
	Not included	Technical and econ	omic write-offs, fire	damage, other losse	es



#### **Rental service**

Swift availability of formwork equipment is a crucial factor. Doka's international network of sales and logistics facilities ensures certainty of supply and rapid provisioning times. The certified Doka quality standards support your cost-effective construction:

terreiranu reconditioning service

Service

 Rental service Formwork Burn

Reconditioning & fat-rate

Rental and

- Reduced need for capital expenditure
- High-performing rental parks for certainty of supply
- Efficient storage capacity, because deliveries are selective and on schedule



#### **Formwork returns**

The rental formwork is counted and inspected jointly right on the site or at the Doka branch. This way any damage and follow-up costs are defined together and transparently listed in a binding return delivery report.

- Outlay for cleaning and reconditioning is itemised
- Identification of damage, if any
- Client-owned material is separated by comparison with the on-site stock of rented equipment
- Doka can take care of restacking, packaging and bundling operations on request

## \_Understanding needs: Develop the future

The combination of the right formwork and the matching services ensures the success of your project. Work on site involves many activities that have to be taken into consideration in planning and then implemented in execution. A set of services tailored to your requirements gives you the necessary support.

The table below sets out the entire Doka offering so that you can pick out the services you need for your project.

	Doka services offering	Branch	on-site	Project-specific m of services
Project management	Engineering service			
	Project co-ordination	$\checkmark$	✓	doka
	Deployment plans	✓		doka
	Cycle planning	$\checkmark$		<b>_</b>
	Structure modelling + 3D-planning	$\checkmark$		<b>_</b>
	<ul> <li>Assembly drawings, assembly by the customer</li> </ul>	$\checkmark$		<u>_</u>
	Static calculation	$\checkmark$		doka
	<ul> <li>Formwork instructor</li> </ul>	$\checkmark$	$\checkmark$	doka
	<ul> <li>Project processing on-site</li> </ul>	$\checkmark$		<mark>doka</mark>
	<ul> <li>Training &amp; consulting</li> </ul>	$\checkmark$	$\checkmark$	<u> </u>
	Pre-assembly on site			
	Pre-assembly service	$\checkmark$	$\checkmark$	doka
	Formwork pre-assembly on site		✓	doka
	Logistics service			
	<ul> <li>Organisation of transport &amp; freight</li> </ul>	$\checkmark$		doka
	Rental and reconditioning service			
	Rental service	$\checkmark$		doka
	Reconditioning & service fixed rates	$\checkmark$		doka
	<ul> <li>Formwork returns</li> </ul>	$\checkmark$	$\checkmark$	
Tools for site-pro- cess optimisation	Tipos planning software	✓	✓	🔔   <mark>doka</mark>
	myDoka customer platform	$\checkmark$	$\checkmark$	🔔   <mark>doka</mark>
	Concremote concrete monitoring	✓	✓	🔔   <mark>doka</mark>

Our aim is to continue developing the best solutions in future, so with every single project we collect important information that we incorporate into our offering.

Execution by customer

# \_Understanding projects. Reference project 'Lahntal Bridge' viaduct

The cantilever method was used to build the new Lahntal Bridge across the Lahn River as part of the A3 motorway near Limburg, Germany. Six pairs of round, slender piers for two-lane carriageways in each direction support the separate superstructures of the bridge. Doka's formwork pre-assembly team quickly and efficiently handled the assembly, disassembly and repositioning operations of the two steel-girder grilles and the four Cantilever forming travellers.



#### Location: Limburg, Germany Construction work by: Max Bögl Bauunternehmung GmbH & Co. KG Construction time: 2013 – 2016

#### **Products used:**

Cantilever forming traveller, Climbing formwork Xclimb 60, Stair tower 250, Large-area formwork Top 50

#### **Project solution:**

- Doka experts on site pre-assembled the steelgirder grillage for the pier heads and prepared the Cantilever forming traveller
- The hydraulic version of the Climbing formwork Xclimb 60 was used for the piers
- Steel-girder grilles and pier-head formwork were designed and built entirely by Doka specifically for this project

#### **Customer benefits:**

- Single-source solution means fewer interfaces
   Responsibility and risk are transferred to safe hands
- Realistic planning translates into cost certainty and on-schedule progress
- Professional training of the site crew for fast, safe forming
- Flexibility for dealing with urgent modifications because project partner is present on site

