The Formwork Magazine

Doka Xpress

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Doka Stronghold in the Middle East

doka
The Formwork Experts

Editorial

Dear Customers,

Innovation and active partnering with you were the benchmarks for Doka's success in 2012. Based on your feedback and high demand we launched Dokadek 30, a seamless and efficient panel-floor formwork system which radically speeds up forming in large areas and offers the safest way to form slabs in the region.

Further we introduced Dokaflex 15, a brand-new professional handset system for affordable housing construction which is already receiving major accolades. To greater cater to your bridge and road infrastructure projects and maximize effectiveness of our Load-bearing systems Staxo, we increased Doka site-supervision support to include the new onsite assembly service.

The past year resulted in even better customer support since we expanded our team with experienced key account sales managers and engineers in many of our Middle East offices. Our innovations and people are exactly on track with the Middle East's planned growth and we will swiftly and confidently move with the region's massive construction challenges.

Sincerely,

Peter Vogel
Director Middle East
Doka Group

Doka News

Doka Training Seminars ▶

Doka Middle East supports fast and safe assembly and deployment of its formwork by offering site supervision and onsite training, plus informative theoretical seminars.

▶ Seen here, training conducted in Saudi Arabia for the ongoing stadium build.

▲ Doka is supplying all the formwork solutions including safety systems for the 300 m Lamar Towers.

Let's Talk Formwork Safety

Lamar Towers in KSA gets a high safety rating using Doka safety system – protection screen Xclimb 60. The full enclosure round the uppermost levels of the building enables all work to be carried out safely, protected from all climatic influences.

▲ Flexible Doka forming solutions for mosque domes and minarets.

Formwork for Minarets

Doka is proud to contribute to social and cultural projects. Doha's West Bay mosque is just one of many Doka community enhancement projects. The minaret was formed with Staxo 100 and Large-area formwork Top 50, systems that adapt perfectly to the architecture of this Islamic place of worship.

Contents

New Innovations Middle East

Coupled with unparalleled service offerings

Dokaflex 15, Dokadek 30 and Staxo 100 are unbeatable.

Doka launches the ultimate housing formwork solution

Dokaflex 15 is the newest cost-effective Doka solution for affordable housing construction. Compared to traditional formwork, Dokaflex 15 offers a major reduction in the price of panel and slab formwork systems and speeds up construction workflows, especially since the system can be assembled by semi-skilled laborers. Using Dokaflex 15, contractors can expect to halve assembly time, weight of material and number of individual components. The unique features allow for more reuses, faster forming times, and minimal onsite adjustments. Dokaflex 15 boasts optimized lifespan and maximum cost savings when used for up to 25 cm thick slabs.

Staxo 100 for all Middle East infrastructure

Load-bearing tower Staxo 100 proves itself over and over with its flexibility on irregular layouts, high stability and rugged load capacity of more than 100 kN per leg. Customer accolades are reflected on its ability to safely handle transfer slabs in the building sector, provide ultimate stability for shoring (including large shoring heights), and for applications in the industrial and petrochemical sectors. The system features integrated access ladders, gapless assembly decks with planking units inside the towers and between frames, integrated connectors and logical color coding for assembly.

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▲ High-capacity and high-performance Staxo 100 for shoring and structural support.

◀▲ Great news for housing-project contractors, Dokaflex 15 is affordable and gets the job done faster.

▲ Ready-to-Use is by far the most effective method of speeding up a formwork project.

Ready-to-Use saves space, costs and time

By listening to and acting on proactive feedback from customers, Doka facilities in the Middle East are offering the exclusive and cost effective Ready-to-Use (RTU) preassembly service. RTU simply means that Doka plans, designs and expertly custom-builds the formwork units for your jobsite requirements. Then, instead of sending out materials for onsite assembly by a contractor's crew, working to a tight JIT schedule Doka trucks the units to site fully preassembled and ready for pouring to start. The bottom line: RTU is in high demand across the region because it saves costs, time and space on construction sites.

Huge panels and highest safety with new panel-floor formwork Dokadek 30

Brand new for clients in the Middle East, Dokadek 30 is the beamless handset system for speed and safety on site. Its lightweight steel construction with powder-coated frames and proven Xlife sheet with built-in plywood, make it excel in safety, ease of handling and high speed for onsite use. Large 3 m^2 panels are ideally sized for forming large areas fast, and they greatly reduce the number of separate parts that need to be shifted.

Results using Dokadek are that contractors can make their entire forming operation quicker, also due to the fact that no crane is needed during setup. With the suspension clamp, infill zones can be formed quickly as Dokadek 30 combines seamlessly with the adaptable floor-slab system Dokaflex. Safety - a topic of utmost importance - is defined in the workflow as Dokadek 30 is deployed from floor level and erected from below with no need for anyone to step on to the slab formwork itself. For the best end result, the tried and tested Xlife sheet offers immaculate concreting results and durability for many reuse cycles.

▶▲ Virtually error-free erection as the Dokadek 30 system has only three different components: panels, heads and props.

◀ **50 cm concrete walls cast outside steel tanks for 6 LNG tanks in Ruwais, UAE.**

The facts

JOBSITE Civil Works-Ruwais GASCO Storage Tank, Propane & Butane Storage Tank

LOCATION Ruwais, U.A.E.

CUSTOMER Granite Construction Company

SYSTEMS IN USE Large-area formwork Top 50 + Crane Climbing 150F

Energy Demands Yield 6 LNG Tanks

To meet ever-increasing market demand, government-owned and operated Borouge is executing a multi billion dollar expansion in the city of Ruwais, a sprawling green oasis 350 km away from Dubai.

The Borouge 3 project is a key part of the Abu Dhabi government strategy for growth, tripling production capacity and consolidating the global market position. The project comprises an ethane cracker, polypropylene and polyethylene plant, offsites and utilities and marine facilities. After completion, total production capacity will increase to 4.5 million metric tons a year.

Granite Construction looked to Doka's engineering expertise in LNG tanks.

6 massive tanks in fair-faced concrete

The scope of the build is a total of 6 LNG tanks, each having a height of 36 m and radius of 35 m. The challenge for the contractors and Doka was to cast 50 cm concrete walls outside the steel tanks. A portion of the total technical solution deployed by Doka is supply and installation of a total of 528 brackets of the crane climbing system 150F in combination with Large-area formwork Top 50. Furthermore, due to the construction methodology an additional platform on top of the climbing system was necessary to enable installation of the reinforcement (rebar). Besides the forming, Doka supplied expert consultancy to ensure that the strict requirement of fair-faced concrete was met to the satisfaction of the client.

Safe transfer of concrete pressure

The construction process for forming the LNG tanks was a single side pouring whereby the contractor erected the steel tank first, followed by a 50 cm reinforced concrete wall against it on one side only. Due to the existing steel structure, it was possible to place weldable couplers for sheet walls on the outer surface of the frame for safe transfer of the concrete pressure through the tie-rod system. For this huge petrochemical project a record 53,000 weldable couplers for sheet walls were fixed to the steel tanks by the contractors.

100 % Doka formwork

Doka Abu Dhabi was the sole formwork supplier on this project.

Joseph Chacko, Project Manager, Granite Construction Company

The professional

"What impressed us most was the full-time Doka site supervisor stationed at our project, and the swift logistics in delivering large amounts of material to our remote site."

Practical tip

Eliminate the need for scaffolding

Providing rebar platforms on the crane-climbing system was one of the highlights, because these extra platforms saved the client rental cost and time. The solution eliminated the need for the scaffolding that would otherwise be necessary for rebar placement.

▲ Doka Saudi Arabia has major influence on speed and fair-faced concrete finish of the stadium.

Epic Saudi Football Stadium with Doka

In the Kingdom of Saudi Arabia, the dreams of football fans are about to come true. The city of Jeddah will soon welcome by the end of 2014, a brand-new, state-of-the-art, 60,000-seat football stadium in a modern architectural design.

The facts

JOBSITE Stadium build at King Abdullah Sports City

LOCATION Jeddah, Kingdom of Saudi Arabia

CUSTOMER MSX, a joint venture of Besix and Al Muhaidib Construction

SYSTEMS IN USE Large-area formwork Top 50 + suspension platform WS10, Load-bearing towers Staxo 40, Staxo 100 stair towers, framed formwork Frami Xlife

SERVICES PACKAGE Engineering, Planning & Logistics, Ready-to-Use Top 50 & Working Platforms

Contractors MSX are working swiftly toward completion of the stadium. The build is sited in King Abdullah Sports City and supported by 100 % Doka formwork supply and service. The stadium complex also includes a 2,000-seat multi-sports facility, an outdoor athletics track with a 1,000-seat stand, a mosque, a parking structure with room for 45,000 cars, tennis courts, football pitches and general sports training facilities.

Doka Jeddah's Ready-to-Use service was a key factor, engineering huge savings on the time and labor that would otherwise have been needed for assembly of timber-beam formwork and eliminating the outlay for the logistics of onsite storage of materials in colossal quantities. Doka Jeddah's warehouse, located just 15 minutes from the site, handled the full industrialized custom assembly of the Large-area formwork Top 50 panels and column formwork Top 50 which were chosen for the forming operations.

Effective workflow saves costs

When it came to quantity surveying, the cost-effective approach was to

◀ **The MSX and Doka Saudi Arabia teams work out the most efficient solution.**

In numbers

FOUNDATION 5,000 m² of formwork with 600 RTU Top 50 panels & corners

CORE WALL FORMWORK
6,000 m² of formwork with 1,100 RTU Doka panels, 2,600 m² of platforms, 400 sets of platform units

FLOOR-SLAB FORMWORK
27,500 m² of floor-slab formwork set with 220,000 m³ of shoring towers

supply initially complete sets of material for only three of the eight construction sections. The planners knew that the material from those three zones could then be re-utilized for the other five zones, reducing total cost for the consortium.

Staxo 40 delivers structural support
The slab support shoring heights ranged from 7-15 m which meant that a flexible system was necessary. The lightweight frames and easy color-coded assembly sped up the workflow by the contractors manpower onsite. Load requirements of 3.5 metric tons load capacity per single leg were met safely. In addition to a site resident engineer & Doka coordinator, two dedicated site supervisors continue to support facilitating correct assembly and safe erection of the towers.

100 % confidence in Doka stadium builds
Doka Saudi Arabia is the exclusive formwork supplier on this project, and due to superior performance, and Doka's well-known references such as the Green Point Stadium, South Africa, and the Allianz Arena, Germany, is one of the strongest contenders for upcoming stadium builds in the Middle East.

Structural analysis and technical drawings arepart and parcel of every Doka engineering service package.

The solution!

Immediately after excavation, Doka Saudi Arabia moved to supply the full engineering, logistics and formwork services for the build. The scope included all vertical columns, floor slabs, and core-walls. Due to the versatility of timber-beam formwork, preassembled Large-area formwork Top 50 panels were ideal for the straight runs and curves of the foundations. The vertical columns and core walls were cast using column formwork Top 50, preassembled and used together with suspension platforms WS10. This was the ideal combination on account of complex column cross-sections and the height of the columns. This formwork is designed to be used and re-used and to meet high fair-faced concrete specifications.

◀ **Doka SKE enabled the entire exterior climbing formwork to be raised as a single platform, bringing all 4 sides of the core wall safely to the next level in 20 minutes or less.**

The facts

JOBSITE Sama Beirut
LOCATION Lebanon
CUSTOMER MAN Enterprise
SYSTEMS IN USE Large-area formwork Top 50, Dokaflex tables, automatic climbing formwork SKE50 and SKE100 for CPB

Sama Beirut Surging Toward Completion

Beirut will soon have the new tallest tower in the country – SAMA Beirut, standing at 186 m. Doka engineered a solution for the highest number of re-uses with a design adopted from Burj Khalifa. The building will be the city's first landmark of this caliber.

The solution!

For this luxurious high rise tower consisting of 8 office floors and 75 apartments, Doka supplied all formwork for typical floor beam & slab support and 100 % of all corewall formwork + SKE50 platforms.

For this build which started in 2011 with an expected completion in 2014, formwork planning challenges included taking into account assembly at an offsite location, an extremely tight construction schedule, and coping with heavy steel reinforcements (seismic design) and deep excavation work.

Hydraulic system the perfect choice
Doka automatic climbing formwork SKE50 was the key formwork solution for the project. With the system's utmost flexibility, it gave the client the ability for fast and efficient climbing of the main core wall. A cycle of seven days was reached easily, taking into consideration how quickly the site crew familiarized themselves with the system. Around 750 m² of the Large-area formwork Top 50 panels were coupled with the SKE system to give the shafts very easy forming sequences, and fair faced concrete as well.

Equalizing speed of vertical and horizontal elements
The perfect combination of SKE50 & SKE100 climbing brackets has been chosen, to meet the requirements of an economical system. Also meeting the requirement for lifting the very heavy loads wherever required, such as a concrete placing boom or large inside shaft cells. The high load capacity of 10 metric tons per bracket and the tall formwork-platform scaffolds allow work to proceed simultaneously, making it possible to "de-link" the forming and rebar operations. Each shaft cell has it's own automatic climbing platform - allowing the time-intensive rebar installation works for the next level to start immediately after curing of concrete - without waiting for formwork stripping, cleaning & climbing. More than 2,000 m² of Dokaflex tableforms were utilized in order to keep casting the horizontal elements in step with the rate of vertical progress.

Sami Mekanna
Project Manager
Sama Beirut

The professional

"MAN Enterprise was able to reach the project's requirement because the Doka system used less manpower. We were able to achieve on time the pouring of vertical and horizontal elements as well."

▼▶ Doka Muscat was awarded the contract in December 2011 to supply the formwork design and A-Z requirements for the entire project.

Prestige Retail Project for Muscat

Lulu Hypermarket, the retail division of the multidimensional and multinational company, is known as a trendsetter within the GCC retail industry.

As part of the company's planned expansion in Oman, the Lulu Hypermarket in Bowsher extended their building to approximately 30,800 m² reaching 5 storeys high.

Optimizing logistics for a tight schedule

Doka Muscat was awarded the contract in December 2011 to supply the formwork design and A-Z requirements for the entire project. To meet the deadlines, the Oman operation ensured that the large volume of rented formwork material was supplied right on schedule. For forming the 770 m reinforced concrete external walls in the basement, Large-area formwork Top 50 in combination with Doka supporting construction frames was used for the straight and curved 6 m high walls.

Maximum flexibility for different column sizes

There are 415 reinforced-concrete columns of varying size on each floor. All the rectangular columns were formed with framed formwork Frami Xlife universal panels and Large-area formwork Top 50 was used for all the round columns. Framed formwork Frami Xlife panels were used to construct the walls for 7 elevator lifts & staircases. The flexibility of Frami Xlife panels is guaranteed efficient regardless of the complexity of the wall's shape. Additionally with the tried and tested Xlife sheet with built-in plywood, longevity is guaranteed for up to 200 reuse cycles.

Due to the vast area of floor slab on each storey, substantial quantities are being used. The total of approximately 86,000 m² of concrete floor slab with headroom varying between 5.50 and 6.50 m were formed by 9,000 m² of Dokaflex tables and 3,000 m² of Load-bearing towers Staxo 40. These were shifted quickly and safely to the next location with Doka transportation fork and shifting trolleys. The Dokaflex system gave full proof of its adaptability when it came to forming the curved beams.

For the external façade of the building, the 11 m high suspended slabs are being shored with Load-bearing Staxo 40 frames.

S. Velupandian, Senior Project Manager Dolphin Trading

The professional

"With Doka formwork materials, ideal solution, safety and efficiency are guaranteed in providing valuable support to the construction site. Through this, it helps us increase our productivity and optimal support in the planning phase."

The facts

JOBSITE Lulu Bowsher Stage 2 Extension

LOCATION Muscat, Oman

CUSTOMER Dolphin Trading & Investment LLC

SYSTEMS IN USE Large-area formwork Top 50, single-sided supporting construction frames, Frami Xlife, Dokaflex tables, Dokaflex and Load-bearing towers Staxo 40

Social Infrastructure Expansion in Kuwait

The elaborate plans for social infrastructure in the Middle East include designing and building the most ergonomic and aesthetic hospitals in the world.

By October 2014 Kuwait will welcome a 300-bed acute care hospital for Kuwait Oil Company in the prominent Ahmadi district. The structure's parameters are unique in every way - sensitive to regional and Islamic principles; reflect local environmental conditions; incorporate state-of-the-art technology, sustainable design; and facilitate a future expansion of 100 beds. The footprint of the hospital is actually derived from the Islamic geometric form of a circle evolving into a rotated square into an eight-sided star. The project boasts the four-storey hospital with a combined area of 80,000 m^2 plus construction of five two-storey residential buildings for medical staff with a combined area of approximately 10,000 m^2.

Securing manpower

For all forming operations commencing in February 2011, Doka Kuwait was the exclusive formwork partner. Working with main contractor Sayed Hamid Behbahani, the biggest anticipated challenge from the beginning was securing adequate manpower for the job, plus a stringent requirement for fair-faced concrete.

Long-standing Doka customer benefits from familiarity and cost efficiency

As a longtime Doka customer, with proper Doka added value maintenance and the contractor's storage of its own Doka formwork stock of floor props, timber beams and standard steel parts, cost efficiency on the floor slabs was maximized.

For the retaining walls and special structure walls, plus the special shaped walls the flexible Large-area formwork Top 50 was used for speed, partly because in Kuwait, the crew is well used to working with this system. For casting all standard columns including the special requirement of 6 m columns, Frami Xlife column formwork was used.

▲ **Universal Frami Xlife panels are ideal for varied cross-sections of column in a 5 cm grid – including forming special 6 m columns.**

Walid Barakat, Project Manager Sayed Hamid Behbahani

Bashar Dib, Site Engineer

The professionals

“Our engagement with Doka resulted in the accurate solution for maximum effectiveness of the systems deployed, combined with strict cost control and overcoming any manpower resource issues.”

The facts

JOBSITE
New Ahmadi Hospital Project

LOCATION Ahmadi, Kuwait

CUSTOMER
Sayed Hamid Behbahani

SYSTEMS IN USE Large-area formwork Top 50, framed formwork Frami Xlife, Doka birch plywood for fair-faced concrete, Eco 20 floor props, H20 timber beams

◀ **A combination of readily available material from Doka Kuwait's yard and contractor-owned material benchmarks efficiency.**

▶ The SKE100 climbing formwork for the core has already arrived at the site. 144 automatic climbers will lift the formwork and three concrete placing booms.

The Formwork That Adapts by Itself

Doka has scored yet another sales success by winning the formwork contract for the 555 m Lotte World Tower.

The facts

HEIGHT 555 m
CITY Seoul
USE Mixed use
PECULIARITY
Many cross-section changes
ARCHITECT
Kohn Pedersen Fox
FLOORS 123
CONTRACTOR
Lotte Construction

The solution !

The Doka climbing formwork system SKE100 is raising some 2,500 m² of Large-area formwork Top 50 and three concrete placing booms with the aid of 144 automatic climbers SKE100. There is also a telescopic protection screen Xclimb 60 in use that adapts automatically to the many changes in cross-section.

The client, Lotte Construction, rated the Doka concept as the “technically most sophisticated and best-quality formwork solution”, as it adapts more or less “on its own” to the many changes in cross-section. Quite apart from the core’s enormous height, then, its complex shape presents another set of highly challenging requirements. In front elevation view, the core breaks down into three sections which are roughly equal in height but which are completely different geometrically. From August 2011, the Doka climbing formwork system SKE100 will be setting the pace on this CIP concrete core as well, raising some 2,500 m² of Large-area formwork Top 50 and three concrete placing booms with the aid of 144 automatic climbers SKE100.

Telescopic protection screen on rollers

To enable the slab-forming work in the top four storeys of the rising core to take place under optimum safety conditions, sheltered from the weather, the self-climbing Doka protection screen Xclimb 60 is to be fielded here. This gapless enclosure of the under-construction storeys has to adapt to the decreasing circumference automatically, i.e. without needing any time-consuming modifications. To achieve this, the entire Xclimb 60 solution (screens and platforms) can be adjusted to the structure with 1 m telescopic areas on both ends. Thus the width of the screens can be modified within a range of 3 to 5 m. The screen will be delivered in the next few months.

Column formwork with own rebar crane

Gigantic CIP concrete pillars, known as ‘mega-columns’, run up the outsides of the structure. Between the first and last casting steps, their quadratic cross-section tapers from 3.50 m to 2.00 m. The self-climbing solution ‘SKE50 plus’ is used here in conjunction with ‘Top 50’ Large-area formwork elements. To speed up the construction workflow still further, each column will have its own crane for lifting in the rebar. These cranes are ‘climbed’ together with the formwork solution.

Twin Towers Qatar: Double Impact on Doka Climbing Tasks

In recent years, Doha – the capital city of Qatar – has seen many spectacular new skyscrapers rise above its West Bay business district.

The contractor Arabtec Construction LLC is building two 185 m skyscrapers in the brand-new business district of West Bay in Doha. The two towers will each house offices and hotel rooms on 48 storeys, complete with three podium levels of multi-storey parking space and two basement levels. Work began in 2010 and is scheduled to take 30 months.

Doka has supplied a complete package of formwork resources for the Twin Towers development in Doha's West Bay – including the automatic climbing formwork for the shaft cores.

Keeping pace with SKE50

Doka climbing formwork SKE50 is setting the pace on the building of the two CIP concrete cores. Both cores are being climbed ahead of the floor slabs using a total of 94 automatic climbers SKE50 and 1,800 m² of Large-area formwork Top 50. The climbing scaffolds come with completely railed-in working platforms and are anchored to the concrete at all times – ensuring the greatest safety for the site crew even in high wind conditions. Arabtec Project Manager Mohammed Ali Nada is very satisfied with the construction progress: "Our collaboration with Doka Qatar has gone very smoothly, both in the planning stage and during the build itself. The economical formwork systems are easy to handle and are crucial in helping us to work more effectively and save time."

Plenty of space for safe working

To form the stiffening shear walls at the slab edges, Doka supplied its Large-area formwork Top 50. This versatile system, nearly 830 m² of which is in use on each casting section, adapts readily to the structure's changing geometry. The 2.40 m wide platforms of the crane-jumped formwork system MF240, also in use here, provide ample room for safe working. The versatile Dokaflex floor-slab system is being used for the typical storey floors, while the high slab supports needed in the podium zone are being provided by Load-bearing towers Staxo 40. This weight-optimized Load-bearing tower system is engineered for high user ergonomics, enabling fast assembly and dismantling times while ensuring high workplace safety. In this way, Staxo 40 makes a crucial contribution towards greater efficiency in the construction workflow.

The facts

JOBSITE Twin Towers

LOCATION Doha, Qatar

CUSTOMER
Arabtec Constructon LLC

SYSTEMS IN USE Automatic clibining formwork SKE50, climbing formwork MF240, Large-area formwork Top 50, Load-bearing towers Staxo 40

Doka Formwork Service Management

Khalid Mehmood, Project Manager Ghulam Rasool

The professional

“Since this project was our first entry into the infrastructure market in UAE, we could not take any risks on satisfying the client. Formwork was a big factor and the combination of Doka’s proximity to the site, onsite assembly and Ready-to-Use services has saved us a lot of resources and time.”

The facts

JOBSITE Comprehensive Improvement of the Parallel Roads Contract 3A Jumeirah Lakes Towers

LOCATION Dubai, UAE

SUBCONTRACTOR Ghulam Rasool & Company (Pvt.) Ltd.

SYSTEMS IN USE Load-bearing towers Staxo 100, Load-bearing towers Staxo 40, Large-area formwork Top 50, H20 timber beams

SERVICES PACKAGE Ready-to-Use, Onsite Asssembly

Jumeirah Lake Towers is a collection of high-end residential and office buildings located opposite the Dubai Marina on the other side of the Sheikh Zayed Road.

The development has flourished since the handover of many posh buildings a few years ago, and this year road works have commenced surging towards completion. With the launch of the new onsite assembly service, commissioned by contractors Ghulam Rasool & Company Pvt. Ltd., Doka is taking Formwork Service Management to a whole new level, and is now heavily involved in a revived project for comprehensive improvement of parallel roads.

The NW-01 bridge comprises four post-tensioned, dual-celled spans with an average support height of 6.50 m. Doka’s formwork supply covers the full scope such as shoring, bottom slab, wing and internal walls, intermediate diaphragms, cantilever and top deck slabs.

Launch of onsite assembly in UAE

Doka has greater responsibility with its role to ensure the target schedules and milestones are met. Doka Gulf is providing pioneering new services in the scope of work to coordinate onsite formwork erection and assembly, Ready-to-Use preassembly, and even managing the heavy equipment needed onsite to deploy and maneuver formwork.

75 % faster repositioning with Doka custom solutions

Ghulam Rasool, with one of its first entries into market, was highly impressed by the advantages of Staxo 100 in bridge building compared to local systems. Additionally Doka’s preassembled Large-area formwork Top 50 wall shutters with engineered and specially fabricated steel parts greatly reduced the quantity of fabricated timber elements required for forming the bridge’s shape. Finally, Doka Dubai provided a special suspended solution that made the repositioning process 75 % faster than conventional de-shuttering sequences.

The solution!

16,000 m³ of Load-bearing towers Staxo 100 form the full four spans of the bridge. The preassembly team has fabricated 1,200 m² of Top 50 panels, which Doka’s onsite assembly team are erecting using spindles and a special suspended solution to speed up and simplify handling and repositioning. At the outset, Load-bearing tower Staxo 40 is utilized for forming the top and cantilever slabs.

▶ Seen here JLT interchange, is the second bridge project award this year for Doka Dubai.

◀ **Staxo 40 scores high for fast progress at the prestigious upcoming Kuwait University City.**

The facts

JOBSITE
Sabah Al-Salem University, College of Arts and Education

THE CUSTOMER
Arabtec Construction LLC Joint Venture Combined Group Contracting Company

LOCATION Shidadiyah, Kuwait

SYSTEMS IN USE
Load-bearing towers Staxo 40, Large-area formwork Top 50, Dokaflex

Philanthropic Vision for Education

Located south-west of Kuwait City is a six million square meter plot allocated to the University City, whose mission is to integrate facilities of health, science and humanities into one campus.

The vision is to develop world class educational facilities equipped with the most advance Resources for human talent and future development in the country.

Four colleges supplied by Doka
Doka is supplying initially for the first educational building whereby the contractors are using both new and existing Doka stocks for the University City which will be completed in 2015. The first building to be constructed was the College of Arts for Men. The plan is to optimize cost-effectiveness and reduce the amount of total material required by shifting and reusing formwork in various sequential zones. Contractors did not hesitate because they were confident that any additional material required would be supplied to the site on schedule from Doka's Shuwaik warehouse.

Basement heights of the building were 7.2 m with a single casting of Large-area formwork Top 50. Columns of different sizes were easily formed with Large-area formwork Top 50 as well as retaining walls. For single height slabs, Dokaflex slab system was used. To ensure the highest level of safety required by the client, certain floors of drop-beam design were supported with a combination of Staxo 40 and additional Eurex top floor props.

Staxo 40 scores in Kuwait
The fast and safe Load-bearing tower Staxo 40 gave structural support for shoring heights of approximately 7.5 m. The site management were extremely happy with the fast result of the Staxo system, especially because it was lighter with an ergonomic H shaped frame, faster to erect by just two laborers for one tower and with few separate components. Entire towers were swiftly and safely moved by crane, due to the system's crane safe connections.

The challenge

One side of the building wall features a prism shape finish, which necessitated the casting of inclined columns varying from 62 to 70 degrees. As a key part of the design, Doka successfully met the requirements with the flexible Large-area Formwork Top 50 plus cantilever brackets to help climb the formwork.

Awni El-Baraqouni, Deputy Project Director, JV Arabtec & Combined Group

Dr. Abdulaziz Al Hosamy, Project Director, JV Arabtec & Combined Group

The professionals

"Due to the sheer magnitude of the project, we are extremely happy to work with professionals who recommended the correct system, offered round-the-clock support, available supply of material, and the exact training required. We were very happy to be introduced to Staxo 40 which saved us a lot of time."

In Brief

News, dates, media, awards

We are extremely pleased to welcome two new dynamic faces to Doka Middle East.

◀ **Ralf Bürger, Managing Director Doka Qatar WLL**

◀ **Karl Heinz Riedl, Managing Director Doka Gulf FZE**

▲ **Global competence center support for tunneling projects**

▲ **Doka & Dubai Municipality held a formwork safety seminar**

TUNNELING CHALLENGES
Every single project is unique and calls for custom-tailored services. No matter which tunnel-building method you use, the Doka formwork experts will work with you to find the right solution.

ANOTHER HIGH-RISE EXPERT
The gecko, like Doka, is synonymous for its abilities in safe and fast climbing. For more info stay tuned to www.youtube.com/doka for the “gecko experience”.

DOKA SAFETY ON WORLD HSE DAY
Dubai Municipality teamed up with Doka Gulf FZE to present new safety innovations in formwork systems which comprehensively address all aspects of material quality and construction jobsite safety. The event held at Dubai Municipality on May 1, 2012, was entitled “360 Degree Formwork Safety Symposium”.

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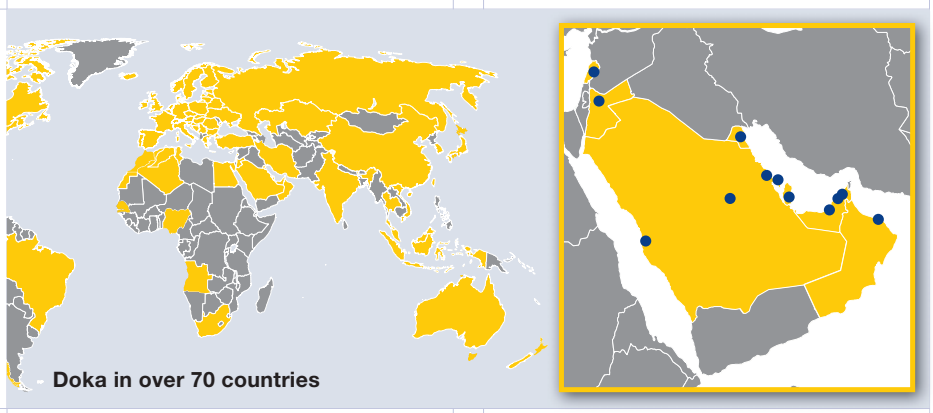

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In some cases the site photos show the situation during formwork assembly and are therefore not always complete from the point of view of safety.

Simply give us a call! We´ll be pleased to advise you.

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