

Powering the infrastructure

Working Safe at Site

Campaign run by Doka India, in order to promote safety in highrise constructions

Fast forming

Quick glance into the usage of panel formwork frame system at various site in India

Fair faced concrete

Architectural marvel coming up in Navi Mumbai



Editorial



Dear Readers,

It is with great pride that I introduce and present to you our third Indian edition of Doka Xpress. Nearing the 6th anniversary of Doka's foray into Indian business community, we are proud to say that with wide coverage, we have been able to mark our presence in every construction sector ranging from Power, to high-rise, to residential and to Infrastructure projects. The credit for this achievement goes to the immense trust that our Clients and Business Partners have shown in us, this single intangible commodity is what has driven Doka so far, and promises to take us ahead.

Despite the slow growth in construction industry last year, Doka India has expanded its business both in terms of turnover and customer reach and has continued to add newer dimension to the Industry by delivering distinctive and innovative solutions in a gamut of infrastructure and connectivity projects.

I would like to take this opportunity to thank our partners for their faith, constant support and guidance. Our success over these five years reflects the cohesiveness and the synergy that the Doka fraternity has managed to incorporate in its everyday operations.

Needless to say, despite Doka's appreciable operational progress in India so far, the Company is aiming to continually expand Doka as a brand and explore the enormous opportunities the growing Indian infrastructure industry has to offer.

Yours Sincerely
Anupam Kumar Sharma
Managing Director

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Cover: Cooling tower, Nellore (Andra pradesh)

Doka News

Excon 2013 ▶

Doka participated in the South Asia's largest construction equipment exhibition "Excon 2013" in Bangalore, where we displayed the wide range of products for residential, commercial and infrastructure construction.



◀ Climbing high in North India

Doka has won the first high-rise residential tower coming up in North India, Spira Tower, the sky scrapper will top out at 300 m and features 80 floors among which, 13 floors are dedicated for residential apartments. Spira tower is part of the mixed used development project launched by Supertech, which in turn has appointed Doka for providing automatic climbing formwork solution for Core walls. With this project Doka continues its expansion strategy in the segment of the world's tallest buildings.



▲ Safety briefing being conducted at one of the projects explaining the importance of climbing cone in climbing formwork system.

Working safe with Doka

It's only when you feel safe that you can concentrate on the job and perform at your best.

An obvious truth, but one that particularly needs to be heeded in construction, where the accident rate is twice as high as in other sectors. So, taking a leading role, Doka organized safety trainings at the ongoing high-rise construction sites.

At Doka, solutions featuring all-round safety are an integral part of the company's culture, making The Formwork Experts top-caliber people to work with on all safety issues. Study after study has shown that on safe jobsites, people work faster. Quite apart

from human suffering and loss of value-creation, accidents also cause heavy costs ranging from sick-leave to legal consequences which may even include work on the site being stopped altogether. This is why Doka has long given top priority to making its formwork systems safe and easy to use and moreover has started a campaign where all agencies involved (i.e. Formwork gang, steel fitter, foremen, etc.) are briefed on safe usage of anchor systems of Doka climbing technology and have put-up posters giving details on the same. //



◀ Life is important and everyone working at site is responsible for his and his colleague's safety



▲ The core wall was divided into two zones, which allowed for smooth work flow of activities like rebarring, closing, pouring, stripping etc in one zone while the second zone is climbing

Doka's GenNext formwork technology at Omkar 1973

Omkar Realtors and Developers is a brand that embodies luxury with fine taste envisions changing the Worli skyline through its premium development Omkar 1973 Worli encompassing three skyscrapers going beyond 800 meters together.

The Facts

Jobsite: Omkar 1973

Location: Mumbai

Developer: Omkar Realtors

Products in use: Self climbing platform 400, Large area formwork Top 50, Protection screen, Floor formwork Dokadek 30, Climbing formwork SKE50

Built on a spread of 4.5 acres, this massive project is being built with the best technologies across the world and hence Omkar developers is relying on Doka's Self Climbing Platform 400 (SCP 400), Protection screen Xclimb 60, Column climbing system SKE50 and slab formwork Dokadek 30.

Achieving 6 days cycle

Like a diamond identifiable by its unique number, the project is named 1973, which is the latitude 19 and longitude 73N – a unique aspect of its location. Each tower has been designed uniquely with



a large core area in the center and approximately 19 massive sized columns surrounding the same. Columns and core wall are connected by slab casted in between. So, finding the right formwork solution was the key which would preferably allow the crews to cycle the vertical and horizontal formwork at the same speed in order to meet the tight schedule.

The central core of the building is designed to be self-supporting which allows the core to proceed ahead of the slabs and columns. SCP 400 was selected for the task which offers faster cycle times and already 6days core jumping cycles have been achieved with this system. The core wall was divided into two zones, which allowed for smooth work flow of activities like rebarring, closing, pouring, stripping etc in one zone while the second zone is climbing. Moreover, system was designed such that it allowed for the adjustment required for reducing wall dimensions for both wall formwork and exterior platforms. SCP 400 provides a safe and efficient way to construct high-rise cores and has room for all of the site equipment needed and is enclosed on all sides for a safe, weather shielded working at any height.

The perimeter tower columns for the tower are also critical, and require to be looked separately. The heavily reinforced columns have been designed to stand above the slabs by 3-4 floors to allow the slabs to work without the interruption. For these columns, automatic climbing formwork SKE50 is used, which has been designed in order to accommodate the changing dimensions of column with height. Moreover large working decks have been provided on the top which allows for storage of reinforcement and ease of placing. 4 days jump cycles have already been achieved for the columns.

Pacing the slab with Core walls

The floor slabs are the final formwork element which is critically important for accelerated construction. The speed of decking slabs defines how quick the construction proceeds. Omark required a quick, light weight, labor efficient system to keep up with the automatic climbing systems on the cores and slabs. A drop head panel system Dokadek 30 was chosen solution, which was designed using the combination of standard panels and customized panels, in order to cover the 100 % slab area without any infill zones. Moreover, for all the curved balconies with drop beam, an integrated unturned spandrel beam formwork is being used, which in turn provides a complete formwork solution for Slab and balconies and hence increase the productivity at site.

Working Safe

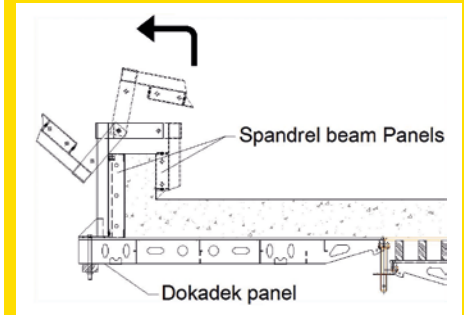
To provide protection to the tower surrounds as well as ensuring a safe working environment even

at 300+m in the air, Omark required perimeter screens to be fitted to the formwork systems. A 'gapless' enclosure at the top building-levels that is anchored to the structure at all times means that all work can be carried out protected from climatic influences and in the very greatest safety. The Doka Xclimb 60 protection screens were selected to cover the complicated perimeter of the towers. The protection screen's high degree of pre-assembly simplified the planning and made for a highly economical solution. As Xclimb 60 has been fielded here as a self-climbed system, fast resetting times are possible without crane assistance.

Overall, this combination of core/column/slabs and protection screen with the logistics network will enable a consistent, continuous, safe and speedy workflow. Competent technology, ease of operating and handling, high end performance and safeguarding features of all the systems will surely have a greater contribution towards a robust construction. //

Practical Tip

For up-stand beams, an integrated unturned spandrel beam formwork is being used, which makes work much faster at site



▼ Making columns, core walls and slab activities independent of each other was key to achieve faster cycle time.





▲ Frami eco is an ideal solution for fast, cost-effective forming of columns, shear wall, foundation and retaining walls

Complete formwork Solution for a residential building

M/S. Prathamesh Engineers & Contractors Llp is coming up with a G+18 residential building in Matunga east for their client NMC group. They have relied on Doka for providing a complete formwork solution for the building in order to achieve faster cycle time, lower labour cost and better concrete surface results.

The Facts

Jobsite: P.G House

Location: Mumbai

Developer: NMC Group

Contractor: Prathamesh Engineers & Contractors Llp

Products in use: Framed formwork Frami eco, Floor formwork Dokaflex 15

The project is a rehabilitation building, coming up in a densely populated area of Central Mumbai. As the area for construction is quite small, so crane is not available at site and moreover, due to changes in the floor plan of the building with height, flexibility in the formwork system is must.

So, Doka provided flexible as well as manually handled Framed formwork Frami eco and Slab formwork Dokaflex-15. Mr. Kinjal R. Pithadia says that with use of system formwork their team has achieved not only faster work at site but also they are able to maintain good concrete finish



Practical Tip

Markings on H-16 P beams makes forming a lot faster by cutting the time needed for measuring-up, and also a lot safer. Once the floor-slab formwork has been set up, the foreman can check it quickly and easily.



▲ Dokaflex 15 has been developed specifically for forming concrete floor-slabs of between 10 and 15 cm in thickness. This versatile hand-set system features weight- and capacity-optimised system components and so is very easy to handle.

with quality work at site. Frami eco is ideal for fast, cost-saving forming – with or without crane assistance. It scores for its simple system-grid and low form-tie ratio. This provides flexibility on the site, reduces the commissioning quantities and minimises infill zones. Above all, though, the system shortens the forming-times, ensuring fast workflows: a hammer is the only tool needed. The range of possible uses is very wide: with widths of 0.30 m to 0.90 m – in a 15 cm grid – and heights of 1.20 m and 3.00 m, it is a complete system for forming walls, columns and foundations. Dokaflex 15 is a lightweight hand-set system for

floor-slabs which wins out over traditional forming methods for its attractive price level. This versatile system also stands out for benefits like short forming-times and easy handling on the site. Thanks to the optimised weight and load capacity of its system components, which makes it lighter than conventional formwork systems. In this project, Considering the small room sizes and changing floor plan, this system proved to be the best in terms of flexibility, where same set of components can be used for different layouts and moreover the ability to erect the system from ground has increased labor productivity. //



The Professional

"With use of Frami eco and Dokaflex 15, we have been able to improve the productivity at site and also concrete finish results are quite impressive"

Kinjal R. Pithadia



Project: Bannari Amman sugar Mill
Location: Karnataka
Contractor: URC Construction (P) Ltd
Structure: Retaining Wall

Framed formwork Frami – Success on site

Framed formwork Frami is ideal for quick, economical forming of foundations, walls and columns – with or without a crane.

Frami panels scores for its simple system-grid and low form-tie ratio, which provides flexibility on the site, reduces the commissioning quantities and minimises infill zones. Above all, though, the system shortens the forming-times, ensuring fast workflows: a hammer is the only tool needed. This system is in use at various sites in India and contractors are benefiting with its various applications It comes in two variants:

Framed formwork Frami Xlife

- With Xlife sheet for high number of repetitions
- Hot dip galvanized steel frames

Framed formwork Frami eco

- With High grade formwork sheeting
- Specially powder coated hollow section steel frame



Project: Brigade Vantage
Location: Kanchipuram
Contractor: URC Construction (P) Ltd
Structure: Retaining wall



Project: Godrej platinum
Location: Bangalore
Contractor: Gammon India Limited
Structure: Shear walls, column



Project: Shristi CBD
Location: Bhopal
Contractor: Gammon India Limited
Structure: Columns



Project: Nathani Heights
Location: Mumbai
Contractor: Gammon India Pvt. Ltd
Structure: Retaining wall



Project: Suvilas royal gardenia
Location: Bangalore
Contractor: Suvilas properties
Structure: Columns, Retaining wall

Project: Stamping and Assemblies plant
Location: Chennai
Contractor: URC Construction Pvt. Ltd
Structure: Retaining wall, foundations

Achieving 1.25 days cycle time!!

Tata projects is constructing a 172.5 metre high cooling tower for 2 x 800 MW Coal based Super Critical Thermal Power Station near Krishnapatnam, Nellore, who in turn is relying on the high-performance Doka SK175 cooling tower formwork.



▲ The working platforms extend right round the circumference of the tower and are gapless. That means maximum safety in every phase of the build

The definitive benefits are primarily the quick forming time with this system, the perfectly dovetailed work-flows in terms of manpower and the in-depth project planning and comprehensive on-site support.

The geometry of the cooling tower, which will stand 172.5 metres high when finished, is characterised by a maximum diameter of 132.10 metres in the first ring, tapering to 76.403 metres at the waist and fluting out to 77.42 metres for the diameter of the topmost ring. In all, there are 128 units of the fully mechanised Doka SK175 cooling tower formwork on site for this project. Cooling tower is being casted in rings depending upon the casting sections and for many of these rings, they have achieved 1.25 days cycle. Moreover, Doka SK175 cooling-tower formwork is designed for precision

adjustment, so tight tolerances issued by Fichtner consulting engineers (India) pvt limited are easily met in each and every one of the concreting sections, totalling 113 in all.

In all, there are 128 units of the Doka cooling-tower formwork deployed on this build. The climbers carry robust steel formwork and are climbed from section to section by 14 powerful electromechanically actuated lifter systems. The lifter mechanism is designed for easy manual handling and that too makes for efficiency even when the formwork assemblies in question are large. The climbers and the formwork are securely guided along the structure throughout the entire climbing process. Consequently, the cooling-tower formwork can climb safely even at high wind velocities. //

The Facts

Jobsite: Cooling tower

Contractor: Tata projects pvt. ltd.

Height: 172.5 m

Maximum Diameter: 132.1 m

Products in use:

Cooling-tower formwork SK175



► The new cooling tower for 2 x 800 MW Super Critical Thermal Power Station will be 172.5 metres high and is being built with the fully mechanised Doka SK175 cooling-tower formwork.



Practical Tip

As a common practice, plywood is screwed on beams from the front leaving an impression on the concrete. To address this concern, Doka employed the special screw bracket allowing plywood to be fixed from the back.



▲ Wall formwork Top 50 was designed to perfection in order to obtain the concrete pattern designs set by the architecture

Fair faced concrete

D.Y Patil Management building is a management institute coming up in New Mumbai which has been designed by the world-renowned architect with a fair-faced concrete concept.

For the 10 storey institute building, Doka delivered high-performing formwork solutions and provided dependable support to the construction operations with a package of services.

Path breaking solution

The ten floor institute building has been designed with fair-faced concrete concept having constraints of predefined surface patterns and in endeavour to achieve the same, D.Y. Patil relied on the wealth of Doka experience in projects with fair-faced finish

Large-area formwork Top 50 with Dokaplex plywood was a right choice for casting varying heights of columns, lift-core walls & retaining walls while maintaining right pattern not only in terms of plywood but also in tie-rod holes. Moreover, in order to remove the impressions of screws used to fix the plywood to the top50 frame special screw bracket were introduced so that plywood can be connected from the back leaving no impressions on the concrete face. Moreover, Doka-OptiX, a specially designed release agent was sprayed on the formwork sheets to realize bright and low pore concrete surface. To cast the

varying depth of slabs at height greater than 5 m, Doka proposed fielding the high-performance Load-bearing tower Staxo 40 system. It's extremely sturdy steel frames, in three different heights, are easy to erect safely and provides better support. //



The Facts

Jobsite: D.Y. Patil management building

Location: Navi Mumbai

Customer: Padamshree Dr. D.Y. Patil University

Products in use: Load bearing tower Staxo 40, Large area formwork Top 50

◀ Large area formwork Top 50 is flexible enough to take any shape and is strong enough to cast up to 12m heights

In brief

News, dates, media, awards

Dokaflex tables for large slab area

L & W Construction Private Limited is constructing RMZ eco world project coming up in Bangaluru. It is a commercial IT park and once completed will have a total built-up area of 7 million sq.ft. In order to have faster cycle time, L&W Constructions is relying on Dokaflex tables. Dokaflex tables are easy and practical to set up and can be shifted and adapted very quickly. This makes them a cost-effective and efficient way of carrying out large-area slab projects.

One Sided retaining walls

Lupin pharmaceuticals is developing a Lupin Research Park in Pune and has appointed Devi construction for the civil construction. Project involves construction of One sided-retaining walls, columns, lift core walls with utmost precision and is now being constructed using large area formwork Top 50.

Panel floor formwork Dokadek 30

Doka has long offered an extensive line of slab formwork systems for every field of use. The new Panel floor formwork Dokadek 30 marks a significant advance on various aspects of the systems hitherto available on the market. This evolutionary development now makes it possible to form both the typical and infill zones simply, quickly and in great safety. Making its presence in India, Dokadek 30 is now being supplied at two sites in India and will increase the reach in coming time.

Doka India Pvt. Ltd.

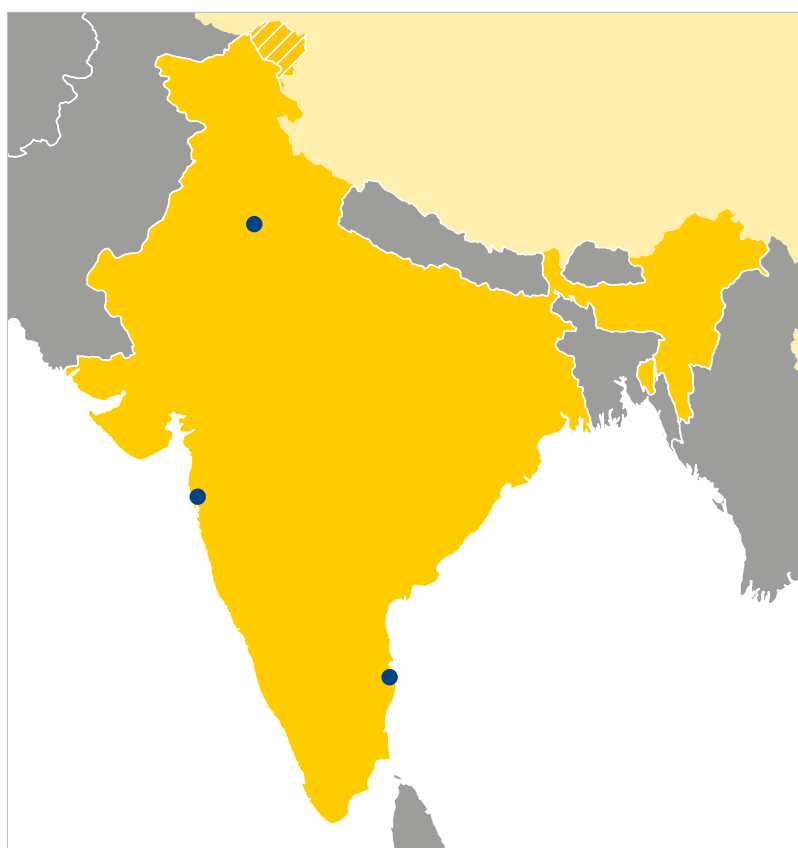
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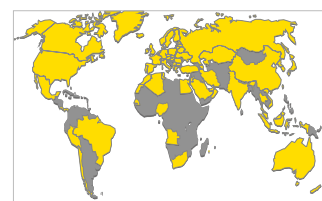
▲ Dokaflex tables being erected at the site



▲ Large area formwork Top 50 being used for retaining wall casting



▲ Panel slab formwork Dokadek 30 is handled slab formwork system.



▲ Doka branches worldwide.

With more than 160 sales and logistics facilities in over 70 countries, the Doka Group has a highly efficient distribution network.



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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.