



DokaXact – Forming with pin-point precision

Sensor system for positioning and aligning wall formwork of highrise cores

DokaXact is the first interactive sensor-based system for precise positioning of wall formwork elements for highrise cores. With this new product, Doka offers an important component for digitizing construction site processes and in doing so takes an important step toward smart construction sites.

At several levels in the company, Doka is working on future construction methods and proceeds along two paths. Existing products and services are continuously improved and further developed. At the same time Doka develops new products that reflect the construction method and claim to quality. Both paths are aimed at improving construction site productivity. DokaXact is one of the latest innovative products developed by Doka. Designed to ensure certainty of deadlines and costs when building a highrise core, it creates more efficient processes, increased productivity and higher quality of execution.

DokaXact is a sensor-based system that supports surveyors and site crews as they quickly position and align wall formwork for automatic climbing systems. The process utilises a measuring system that is attached to defined points on the formwork and communicates wirelessly with a central processing unit. When calculating the required inclination of formwork elements, the actual position of the preceding casting section serves as the base. The sensor system is accurate down to $\pm 2\text{mm}$, therefore allowing the structure to be built more easily within the predefined structure tolerances. Time-consuming finishing work and resulting expenses for subsequent trades, such as from lift builders, are reduced.

Positioning and live monitoring

Supported by the DokaXact app that provides step-by-step instructions to the site crew, formwork can be positioned and aligned with pin-point precision for the next casting section. Data related to position and positioning progress can be reviewed and used again transparently and independent of location by accessing a cloud. "For me, my favourite feature of DokaXact is the ability of being able to monitor the progress on-site and what's going on, from the office or from anywhere, so I don't have to actually be physically here" emphasizes James Wibberley, Project Engineer from AJ Morrisroe & Sons.

The live monitoring function allows access to the current formwork position at any time. It also visualises how all measuring points in the same formwork section change when individual measuring points are plumbed and aligned. This is not an option when aligning formwork points with traditional sequential methods. Digitizing the process of "Positioning and aligning the formwork" allows for seamless documentation that can be accessed by defined user groups regardless of time and location.

The ease of operating the system gives site crews more autonomy when positioning and aligning formwork of highrise cores. "The indispensable feature of DokaXact is for sure the accuracy of the element we cast in – before, during and after the pour – allows you to oversee the whole process from start to finish, to make sure it is cast within the design position, and there are no errors" adds James Wibberley. This process yields savings for surveying services and labour costs, thus accelerating casting section production.



Photos:

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DokaXact is the first interactive sensor-based system for precise positioning of wall formwork elements for highrise cores.

Photo: DokaXact_Sensor.jpg

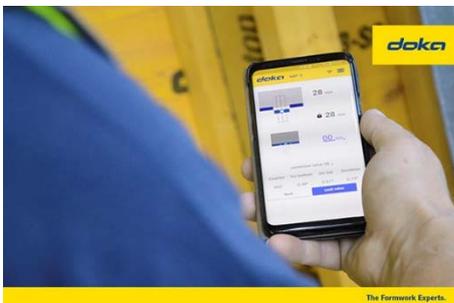
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For the first time ever, the system is being used in the third phase of Lendlease's Elephant Park in Central London. This phase includes a 25-storey and 81m high residential building, which is set to be completed in 2020 and located next to a brand new 2-acre public park, which is set to be one of the largest new green spaces in the city.

Photo: Elephant Park.jpg

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When using the DokaXact app, formwork can be positioned and aligned for the next casting section with pin-point precision.

Photo: DokaXact_App.jpg

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About Doka:

Doka is a world leader in developing, manufacturing and distributing formwork technology for use in all fields of the construction sector. With more than 160 sales and logistics facilities in over 70 countries, Doka has a high-performing distribution network. It ensures that equipment and technical support are provided swiftly and professionally. Doka is an Umdasch Group company with a workforce of more than 6,700 employees worldwide.

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