

Doka Table Lifting System (TLS)

What the innovation is: The Table Lifting System (TLS) is an electric powered lifting platform that allows pre-assembled Dokamatic table formwork to be cycled between floors on a building structure without the need for a crane. Dokamatic tables are formwork tables for horizontal slab construction available in fully assembled units, including plywood. This eliminates build up cost, reduces rental costs and allows for less skilled and smaller crew sizes. The TLS device, along with Dokamatic tables, is taking high production concrete forming methods - typically only affordable in large high-rise construction projects - and making them available as a method of construction for low to mid-rise building projects. On low to mid-rise projects the typical method of construction is to handset each piece for setup and stripping on every floor. With the TLS, contractors can now economically gang the slab formwork in large units and move them from floor to floor without the need for a crane. The system is adaptable to any building structure and can be used from the ground floor up. It attaches to the previously cast slab with only two embedded anchors and cantilevers from the building as a mechanical outrigger platform.

Once formwork is ready to strip and cycle, one worker moves a complete formwork table onto the TLS platform. The platform is then mechanically raised to the top of the cast slab, another worker moves the table unit off the TLS platform, then lowers the platform back down and continues the cycling of each table unit. It also allows for reshore props and material on floors below to be moved from one location to another without using a crane. This completely frees up crane time to complete other tasks on the project, increase production and reduce overall labor required.

Why it is innovative: The Doka Table Lifting System (TLS) is the only system to allow formwork for horizontal concrete to be moved from floor to floor on a structure without the need for a crane. Typically, crane time is a valuable asset on concrete building projects and can be the driving force of production on any jobsite. Doka TLS was designed with this in mind, and takes the crane completely out of the formwork cycle schedule. Therefore, it dramatically increases concrete slab production and completely eliminates crane requirements to cycle formwork. This allows the crane to be entirely free, during the normal time it would be tied up moving equipment between concrete pours, to work in others areas of the project. Contractors are able to use the crane to pick and set such items as reinforcement bars, post-tensioning cables, vertical formwork, deliveries to the site, or all other tasks a crane is necessary for on construction projects. In addition, since there is no lag time waiting on the crane, the system allows for continuous movement of the equipment. Attached to the building at all times, it is an extremely safe system designed for use in high winds up to 45mph. This allows production to continue during weather conditions where a crane would normally shut down.

What it has changed or replaced: The TLS is changing the traditional construction method for costs and planning of forming horizontal concrete on building structures. It allows for complete vertical repositioning of large ganged table formwork and other materials without the need for a crane. It is changing the number of cranes required on the jobsite, changing labor requirements and reducing the number of construction days required to complete a building structure.

Where and when it originated, has been used, and is expected to be used in the future:

In 1996, the TLS was developed in collaboration between Doka Austria and its partner company in Germany with the intent to reduce labor costs and safely increase production times on construction projects. Today there are numerous building construction projects all around the world using this innovative technology.

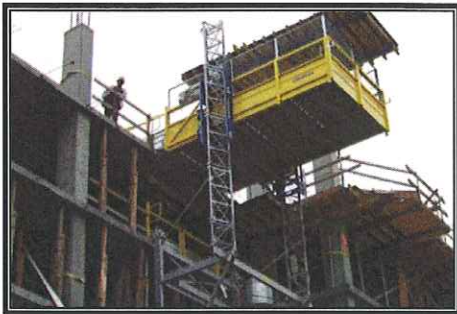
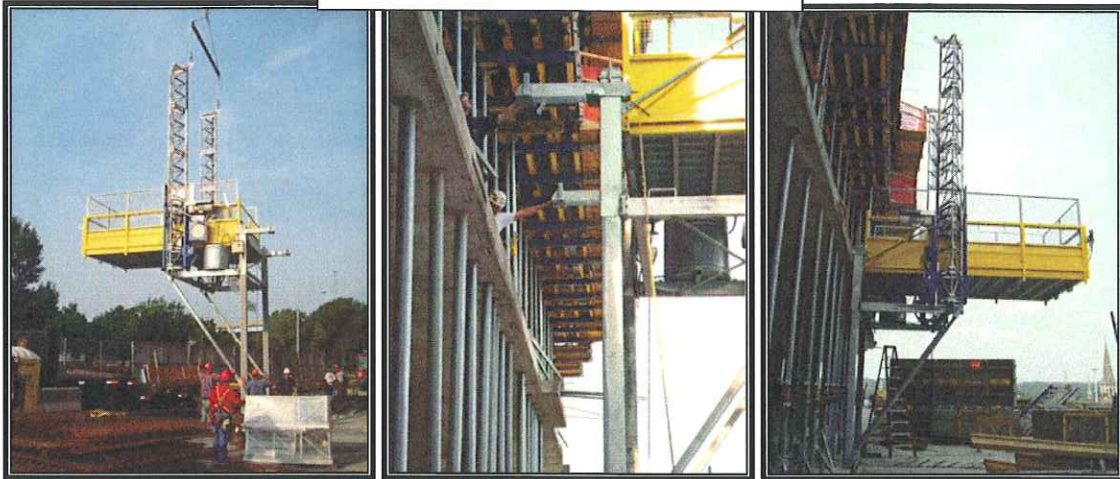
The TLS was formally introduced at the January 2007 World of Concrete exhibition in Las Vegas, Nevada. Immediately after seeing the system at the exhibition, Kent Companies of Grand Rapids, Michigan ordered the first unit for use in the US. It has been in use in the construction of River House Condominiums in Grand Rapids, a 36-story high-rise building, since August 2007. The TLS has allowed them to cycle formwork on a weekly schedule completely independent of the crane and harsh winter weather conditions in Grand Rapids. In April 2007, the TLS debuted at Bauma and shortly thereafter, was put in use on the first project in Europe, Quarter Shopping Center at North Heath in Munich, Germany.

In the United States, a 10-story Renaissance Hotel project was recently completed in Raleigh, North Carolina. The contractor, who typically forms horizontal concrete on building structures with traditional lumber and plywood, was able to reduce his formwork crew from an average of 25 people to approximately 12 people and still maintain his construction schedule by using the Table Lifting System in conjunction with Doka formwork tables.

An additional 14-story building project has begun in Nashville, Tennessee and additional TLS units have been ordered for building construction projects in New Orleans, Omaha, San Francisco and Virginia Beach. In addition to the US projects stated above, today the Doka Table Lifting System is also in use on dozens of projects all around the world.

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