Amstetten, December 2011

Press release

**Cost-effectively forming geometrically challenging**

**twin suspension towers**

In Zaporozhye, the industrial metropolis in Ukraine’s southeast, a multi-lane cable-stayed bridge is being built alongside an older viaduct. On completion, this large-scale infrastructure project will massively reduce the traffic burden on the existing bridge and significantly improve the daily traffic situation at this major river crossing. The two separate roadway slabs are cable-stayed off twin H-shaped suspension towers 150 metres high. The project-management team of lead contractor Mostobud opted for an automatic climbing formwork solution from Doka for the two suspension towers. The crunch factors were the history of smooth cooperation on previous builds, topped by Doka’s acclaimed competence on technologically challenging automatic climbing projects.

In terms of formwork adaptability the demands were tremendous, because the inclination of the tower legs changes over their height and the structures taper upward, but Doka’s SKE50 automatic climbers worked to the project owner’s complete satisfaction and without time-consuming adaptations as the build progressed. For the sake of strength, the two towers are of solid cross-section to the full height of the first two concreting sections. The section is hollow from the 11-metre level up. Per tower leg there are eight SKE50 automatic climbers carrying 100 m² of Doka Top 50 beam formwork, plus a set of Doka shaft formwork, that is being repositioned with a single lift of the crane.

“The Doka formwork has proved the perfect solution for building the two suspension towers quickly and economically. The formwork units are climbed very rapidly using hydraulic cylinders and the forming up and stripping out routines are straightforward, two factors that contribute enormously to speedy progress on this build“, asserts Project Manager Volodymyr Klymenko, succinctly summing up the positive experiences gained with Doka SKE50 automatic climbing formwork on the project. Mostobud’s project-management team is also impressed by the high safety standard of the Doka automatic climbers. “The climber scaffolding is permanently anchored in the concrete, so even in high winds it is safe to climb the platforms. The working platforms are wide and protected all round and as well as that the ladders are firmly integrated into the climbers to ensure safe working conditions”, explains Project Manager Volodymyr Klymenko. A safety net safeguards all four platform levels to complete the comprehensive safety concept.

**Versatility demonstrated in each individual concreting section**

Up to where the cross-beam ties in at the sixth concreting section, the legs of the towers are inclined at an angle of 5.3 degrees off the vertical. Above that beam level, the tower legs are climbed at an angle of 5.6 degrees. The polygonal cross-section tapers 5 cm per concreting section. Aggregated over the total of 40 concreting sections, that equates to a difference of 2 metres between the first and last sections in the towers’ tapering cross-section. Yet another challenge simply mastered with no time wasted by the highly adaptable SKE50 automatic climbing formwork made by Doka.

The hollow-section cross-beam is 6 metres high and 20 metres long to carry the roadway slab and is formed with Doka Top 50 large-area formwork. This formwork is supported at the airy height of some 25 metres by easy-to-use, easily erected Staxo 100 load-bearing towers. The integrated ladderways and a multiplicity of attachment options for personal protective equipment enable the falsework towers to be erected rapidly and, even more importantly, in total safety. Starting from the top surface of the cross-beam, the automatic climbing platforms are set to the new angle of 5.6 degrees from the vertical. A catwalk, suspended from the self-climbing system, forms another connecting link between the two legs of the tower. The walkway means that per tower, one passenger hoist is enough to bring the crew to their workplaces. The catwalk is a special solution developed specifically for this build by Doka. It adjusts perfectly to the narrowing gap between the two inward-inclined, converging legs of the towers: individual sections become superfluous as the build progresses and are simply removed.

**Site foreman ensures smooth progress**

Aware of its lack of experience in automatic climbing, lead contractor Mostobud knew that professional training of the site crew in the correct assembly and handling routines for the formwork equipment by an experienced Doka site foreman would be crucial to ensuring smooth and rapid progress on the build. “The assistance we received from the Doka site foreman enabled us to make full use of the advantages of automatic climbers right from the very first concreting section onward”, avers Project Manager Volodymyr Klymenko with complete conviction. By the same token, in-depth planning of formwork sequencing and continuing support for the site contributed significantly to the success of the project.

**About Doka:**

Doka is one of the world's leading companies for developing, manufacturing and distributing formwork technology for use in all fields of the construction sector. With more than 140 sales and logistics facilities in over 70 countries, the Doka Group has a highly efficient distribution network which ensures that equipment and technical support can be provided swiftly and professionally. The Doka Group is a division of the Umdasch Group and employs more than 5500 people worldwide.

**Press contact:**

Stefan Pruckmayr, Public Relations Manager

Josef Umdasch Platz 1, 3300 Amstetten (Austria)

Tel.: +43 7472 605-2505

E-Mail: stefan.pruckmayr@doka.com

Web: www.doka.com

**Captions:**

**Doka\_2011\_12\_Pylon\_Saporoschje\_IMG\_01**

The 150-metre suspension towers are built using Doka‘s versatile SKE50 automatic climbers and Doka Top 50 large-area formwork.

Photo: Doka

**Doka\_2011\_12\_Pylon\_Saporoschje\_IMG\_02**

The cross-beam is 20 metres long and over 6 metres high; the site crew from Mostobud propped the formwork on Doka’s highly effective Staxo 100 load-bearing towers.

Photo: Doka