



By using formwork solutions from Doka, the storage capacity is effectively tripled.

IMAGE SOURCE: Doka GmbH

Raise and Roll in Colorado: Doka formwork solutions support largest roller-compacted concrete dam expansion in US history

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- Denver Water is raising the Gross Reservoir by 40 meters, tripling its capacity to 146.8 million m³.
- Doka engineered a custom formwork solution to address the unique challenges of the dam expansion.
- The formwork system includes Xclimb 60, Framax S Xlife panels, and WS10 and H20 Beams T, supporting 24/7 progress.

- **DokaXact Load and Pressure sensors will be installed for real-time concrete monitoring.**
- **The project, the largest dam raise in U.S. history, is scheduled for completion in 2027.**

Nestled in the heart of Colorado (USA), the Gross Reservoir plays a crucial role in managing water flow across the North American Continental Divide. In a landmark project aimed at securing the region's future water supply, Denver Water is undertaking the largest dam raise in U.S. history, increasing the height of the 70-year-old structure by 40 meters. To meet the unique challenges of this massive undertaking, Doka has engineered a tailor-made formwork solution, pivotal in tripling the reservoir's capacity.

In a significant move to secure the region's water future, Denver Water is undertaking a project to raise the 70-year-old Gross Reservoir by 40 meters, effectively tripling its storage capacity from 51,8 Mio. m³ to 146,8 Mio m³.

Doka's infrastructure team collaborated closely with the joint venture team of Kiewit and Barnard to develop a custom formwork solution that addresses the unique challenges of this large-scale project. The formwork system incorporates horizontal adjustment to maintain tie spacing as the dam face steps back with each lift, ensuring both aesthetic alignment and structural integrity.



Doka custom formwork for roller compacted concrete.

IMAGE SOURCE: Doka GmbH

Tripling storage capacity by using Doka formwork solutions

Doka's innovative approach combines custom and standard girder forms, creating a flexible, easy-to-move system that supports 24/7 progress on the jobsite. The formwork solutions include Xclimb 60 for the training wall girder formwork, Framax S Xlife panels on the lower training walls and suspended platforms constructed from WS10 and H20 Beams T. The formwork is designed to be assembled in a way that allows one 1.2m lift per 24 hours. As the project progresses, Doka will also install DokaXact Load and Pressure sensors for real-time concrete monitoring.

*"Doka's involvement in the Gross Reservoir expansion project underscores our commitment to engineering excellence and innovation in infrastructure," says **Michael Kennedy**, CEO of Doka USA. "The challenges posed*

by the dam's stepped design and the need for precise alignment with the existing structure required us to engineer a formwork solution that could adapt to varying pressures while maintaining efficiency and safety. By combining custom and standard girder forms, our team delivered a system that not only supports the massive volumes of roller-compacted concrete but also helps ensure the structural integrity of the dam as it rises."



Michael Kennedy, CEO of Doka USA

IMAGE SOURCE: Doka GmbH

According to Denver Water, the multi-year expansion project is the largest dam raise in the United States and the largest roller-compacted concrete (RCC) dam raise worldwide. About 554.000 m³ of RCC and over 68.000 m³ of conventional concrete will be required to complete the project. The project scope also includes 118 concrete steps that rise from the bottom of the existing dam to the new dam crest.

*"Every project comes with unique challenges, and the Gross Reservoir expansion is no exception", says **Michael Kennedy**. "Our team is proud to partner with everyone involved to overcome those challenges in support of this critical infrastructure investment, which will help safeguard the region's water supply for generations to come."*

The Gross Reservoir project is scheduled for completion in 2027.



New dam steps are formed using Doka's custom girder system.

IMAGE SOURCE: Doka GmbH

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