



Full Doka-formworking power for mega-scale hydro in Canada

Doka's biggest ever power-plant contract in North America: for the construction of the Keeyask Generating Station 300,000 sq ft of Doka formwork are in use. Doka's services on this site range from engineering and consulting, up to pre-assembly and instructions for a safe use of the formwork systems. Completion is scheduled for 2021.

In the Canadian province of Manitoba the 695 MW hydroelectric Keeyask Generating Station is under construction on the Nelson River. The scale of this project is enormous: for example the reservoir of the plant will have a surface area of some 23,000 acres. On completion, scheduled for 2021, the plant will supply some 4,400 GWh of electricity a year to homes and businesses in Canada and the US. With more than 300,000 sq ft of formwork, it's a record-breaking project for Doka too. Keeyask is the biggest project ever undertaken by Doka Canada and the biggest power-plant job for Doka in North America. Up to now, the 824 MW hydropower plant Muskrat Falls in the Canadian province of Newfoundland and Labrador, has been the largest power-plant project for Doka in North America.

Counting on international formworking expertise

A team of Doka engineers in four countries is working on finding the best formwork solution for Keeyask. A real challenge, because it's essential to take into account diverse factors, such as simultaneous erection of multiple structures, use of concrete with a high early strength, and the specifics of local geology. The Doka engineers meet these requirements by combining Dam formwork D22, Large-area formwork Top 50S, Framed formwork Framax S Xlife and Load-bearing towers Staxo 100. Formwork systems from Doka are being used to construct the draft tubes, the spillways, the powerhouse and the service bay complex.

Non-tied forming with Dam formwork D22

The Keeyask build is taking shape steadily also with our Dam formwork D22. In use on all of the construction sections where Doka is involved, the system scores especially on account of its high load-bearing capacity and its versatility. One bracket up to 13 ft in height can carry loads up to 220 kN (49.5 kip). These loads are transferred to the preceding concreting section. And no form ties are needed; the formwork is secured only to high-strength suspension points on the structure. The rocky terrain on site of the Keeyask hydroelectric power station is a major challenge for the construction crew. Doka came up with a custom-tailored solution. The bracket of the Dam formwork D22 was made pinnable, instead of the usual welded design. So it is versatile and easy to adapt to the differing rock formations on site. To speed up formworking operations, the D22 can be repositioned as an entire unit, which is eased by the rolling-back function of the formwork. A total of about 2,000 units will have been used by the time construction is finished.

Top 50S – one system for many different requirements

Large-area formwork Top 50S is highly versatile and very much in demand on this build, where it is used for construction of the draft tubes, through which the water is lead away from the turbines. High numbers of use cycles and high levels of re-usability have helped to minimize the need for custom-built formwork. The large-area formwork arrives already pre-assembled on site, and minimizes craneage – due to large repositioning units –, as well as assembly work on site. The Large-area formwork Top 50S was also chosen because, given the wide choice of both form-facing and tie-rod pattern, it can be adapted to very widely differing requirements and any fresh concrete pressure. This was an important criterion for



the Keeyask build, where some sections could only be accessed with difficulty and were thus formed with self-compacting concrete and hydrostatic pressures of 1500 psf.

Faster, and safer too

Doka also compellingly demonstrated the high level of safety of its systems. The Top 50S and D22 formwork systems feature integrated working platforms. Work can proceed in safety and formwork and platforms are repositioned in a single lift, so progress on the build is both speedy and safe. Safety starts with correct set-up and operation of the formwork. So the Keeyask site crew has the on-site support of Doka formwork instructors, who explain how to use the formwork effectively and in safety.

In short

Project:	Keeyask Generating Station
Location:	Manitoba, Canada
Construction work by:	BBE Hydro Constructors LP
Start of construction:	2014
Scheduled completion:	2021
Type of structure:	Hydropower station
Output:	695 megawatts
Systems used:	Formwork: Dam formwork D22, Large-area formwork Top 50S, Load-bearing towers Staxo 100, Framed formwork Framax S Xlife, Services: Formwork planning, formwork instructors, pre-assembly

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, the Doka Group has a high-performing distribution network which ensures that equipment and technical support are provided swiftly and professionally. An enterprise forming part of the Umdasch Group, the Doka Group employs a worldwide workforce of more than 6,000.

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Photos:

You can download all photos on the following link:

<https://www.doka.com/en/news/press/keeyask>. We kindly ask you to mention the copyright, in case of publication.



With more than 300,000 sq ft of formwork, Keeyask is the biggest power-plant contract in the history of Doka North America.

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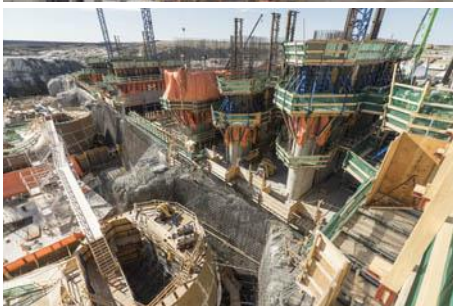
In the Canadian province of Manitoba, formwork power from Doka is being used to build the 695 MW hydro-electric Keeyask Generating Station on the Nelson River.

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Because it is so versatile, Large-area formwork Top 50S is the ideal solution for the straight walls and tight radii characteristic of the spillways.

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Dam formwork D22 and Large-area formwork Top 50S from Doka are used to construct the draft tubes and the spillways.

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