Chryso Helps Secure Future Of Kariba Dam

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CHRYSO HELPS SECURE FUTURE OF KARIBA DAM
The multi-million Euro engineering project to reshape the plunge pool at the base of the Kariba Dam wall incorporates the use of CHRYSO’s leading concrete admixtures to ensure optimal results.

Working closely with main contractor Razel-Bec is Mart Solutions, the Zambian distributor for CHRYSO® Southern Africa.

“Any large and complex project like this one demands ongoing collaboration, which started about two years before the concrete work began in October 2019,” says Mart Solutions director Martie Coulson. “Teamwork is vital between Mart Solutions, CHRYSO® and Razel-Bec to ensure the specified concrete mixes are achieved to the consultants’ exacting standards.”

The world-class project at Kariba Dam will see the building of a temporary coffer dam downstream of the main wall, allowing the deep plunge pool to be drained, reshaped and stabilised. This will reduce the backward scour in the pool, created by water released by sluices in the dam wall; the concern is that this scouring is edging towards the dam foundations.

The innovative admixture CHRYSO® Aquabeton ZA is playing a key role in allowing concrete to be placed underwater, to create a foundation for the coffer dam’s seven piers.

“This highly specialised admixture assists in minimising washout and segregation of fresh concrete when placed underwater,” Coulson says.

Among the range of CHRYSO solutions provided by Mart Solutions is CHRYSO® Omega 162 superplasticer, which is an important component of the concrete mix design for the seven piers.
These large pier structures will range from 250 tonnes to 700 tonnes in weight. The first of these, currently under construction, will measure 5.5 metres tall when complete.

“CHRYSO® Omega 162 reduces the need to add extra water, and so increases the durability of concrete,” she explains. “This admixture also improves cohesion and lowers viscosity in the concrete mix, leading to improved homogeneity and superior off-shutter finishes.”

CHRYSO® Fuge B, which is a pore-blocking permeability reducer for mass concrete, is also being used. This reduces the size of the capillaries, thereby almost completely eliminating the penetration of water under pressure. This is important for the piers on this project as they are constantly in contact with water. The piers are being slip-formed as hollow structures, from a specially-built rig in the Zambezi River. When the piers have achieved the minimum required height, they are floated into position, secured to the foundation and filled with concrete.

Facilitating the release of formwork from the concrete piers is CHRYSO® DEM S, a versatile mould-release oil for timber or steel. Mart Solutions is also supplying the Kariba project with construction chemicals from CHRYSO’s a.b.e. range. The polymer bonding liquid a.b.e. Duralatex is applied to the cone holes in the piers, and these holes are then filled with a.b.e. Duragrun – a non-shrink grout for sealing.

Captions
KARIBA PIC 01 : The multi-million Euro engineering project to reshape the plunge pool at the base of the Kariba Dam wall incorporates the use of CHRYSO concrete admixtures.

KARIBA PIC 02 : Martie Coulson, director at Mart Solutions, on site at Kariba.

KARIBA PIC 03 : The first concrete pier set to float, which has a total length 5 metres.

KARIBA PIC 04 : Getting ready to set weights for levelling purposes.

Hashtags
#construction
#karibadam
#civilengineering
#water

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