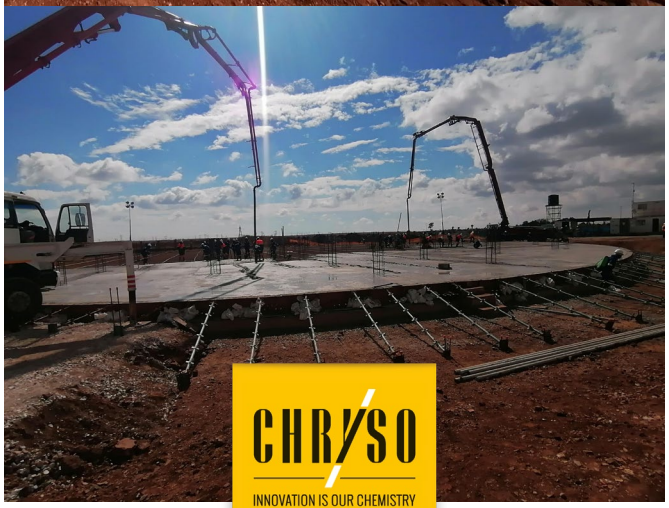
KHUTSONG RESERVOIR

COUNTRY: **SOUTH AFRICA**
DATE: **Mar - May 22'**



212 truckloads of concrete poured from 3 nearby batch plants in one day

The first time a pre-tensioned floor had been used for a reservoir in Africa

Evaporation controlled with CHRYSO® Profilm 19 evaporation reducer

PRODUCTS USED: CHRYSO® ZA 1559, CHRYSO® Serenis, CHRYSO® Profilm 19

DESCRIPTION

The Khutsong Reservoir is the first to construct a pre-tensioned concrete floor for a reservoir in Africa. The reason for this is that this specific area in Carletonville is known for its sink holes and the use of a pre-tensioned floor at 30 MPa would prevent the reservoir from moving.

212 truckloads of concrete for the floor was successfully poured within one day by concrete supplier WG Wearne readymix. The pour started at 05h00 in the morning and was completed at 23h00 that same night. The 1267 m^3 concrete floor used pumped mixes at 35 MPa at a thickness of 450 mm. Water evaporation was successfully controlled with **CHRYSO® Profilm 19** evaporation reducer.

The pre-tensioned cables were laid into the concrete and tensioned as follows:
1st tensioning at 48 hrs at 8-9 MPa, 2nd tensioning at 5 days at least 20 MPa and the 3rd tensioning at 7 days with 30 MPa.

Further to the specification, the shrinkage of the floor was reduced with **CHRYSO® Serenis** shrinkage reduing agent to 0.034%. A minimum of 180 lts of water per m^3 had to be used and fly ash was added as the heat of hydration had to be controlled due to the mass pour. The end strength did not exceed 45 MPa.

PROJECT TEAM

- Client: **Khutsong Reservoir**
- Contractor: **Quantibuild**
- Concrete supplier: **RMX WG Wearne**
- Admixture Supplier: **CHRYSO SAF**

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