An unusual project: The PFT ZP 3 S conveying pump helped to stabilize a cliff at the Edertal Dam with shotcrete.

Stabilizing a Cliff at the Edertal Dam with the PFT ZP 3

The Edertal Reservoir is located behind a dam at the river Eder, near Waldeck (Central Germany). It is Germany's second largest reservoir in terms of area, and the third largest in terms of volume.

At this reservoir, the construction firm Schlune, based in Salzkotten, was charged with a very special job. A cliff, approx. 500 m^2 in area, which is situated next to the dam, had to be stabilized. To prevent the detachment of rocks, shotcrete with a grain size of 8 mm had to be applied to the cliff surface.

Stabilization with Shotcrete

Shotcrete is a type of concrete which is conveyed to the place of use through a closed hose assembly, pneumatically applied with the aid of a spray nozzle and compacted by the energy of its impact on the surface. Since this application technique differs greatly from conventional concrete work, the use of shotcrete for technically demanding projects is today largely the domain of specialized businesses with experienced personnel, considerable know-how and the necessary equipment. One of these specialists is the construction firm Schlune, established in 1921 and today headed by Jörg Schlune. The company currently employs 20 persons.

The cliff was stabilized in the wet spraying technique.

Wet Spraying with PFT Equipment

Concrete application in the wet spraying technique is part of Mr. Schlune's everyday work. And he has the necessary machinery - supplied by PFT, of course. The machine used to stabilize the cliff at the Edertal Dam was a PFT ZP 3 S conveying pump. The shotcrete, supplied by Spenner Zement, was mixed by a continuous mixer flanged to the silo. Then the material was fed to a PFT ZP 3 S equipped with an extension hopper. This PFT machine conveyed the material, through a 35 mm mortar hose assembly, as far as 40 m at a capacity of approx. 40 l/min – with the help of its powerful PFT R 8–3 screw pump.

The shotcrete was projected onto the rock surface with the aid of compressed air. The air is added to accelerate the flow of the material, so that optimal compaction and adhesion to the surface are ensured and a lasting stabilization is obtained. ■

The PFT ZP 3 S pump conveyed the 8 mm shotcrete used.