



Intake Tower, Rehabilitation Lichtenberg Dam (D) Exposed Geomembrane System

Country	Germany
Type	Dam, Reservoir, Intake Tower
Client	Landestalsperrenverwaltung Freistaat Sachsen
Main Contractor	Renesco GmbH
Execution of the Work	Renesco GmbH
Designer	Tractebel (Engie) GmbH
Engineering	IBTW Dresden GmbH
Quality & Material Consultancy	GGU, GEOscope GmbH
Construction Period	2026

Project Description

After 50 years of operation, several rehabilitation works are required at the Lichtenberg Dam, part of the drinking water reservoir situated south-east of Freiberg/Saxony. These include the external dam lining on the upstream dam face, the intake tower and the dam crest.

The barrier structure, which was completed in 1975, is an approximately 40-metre-high rock-fill dam with a surface seal made of asphalt concrete. The intake tower itself is a complex concrete structure that rises out of the reservoir. It is connected to the dam via a 132m long underground passage.

Floodwater is drained off via an overflow in the intake tower. The trumpet-shaped inlet has a diameter of 13.50 metres and tapers downwards to a diameter of three metres

Scope of Service

Supply & Installation of a drained waterproofing system using an exposed geomembrane/geocomposite, stretched by stainless-steel profiles with a quantity of around 3'000 m² for the complex structure including the intake tower.

- Substrate preparation & concrete rehabilitation work.
- Installation of an optical leak detection system, based on a glass-fibre cable, installed in slopes. Function: real-time monitoring (OTDR) for early leak localization and predictive maintenance. Quantity: $\approx 1'200$ m
- HDPE geogrid (4mm) was installed behind the sealing liner.
- Installation of a 3.5mm thick flexible geomembrane/geocomposite, based on PVC-P, according to EN13361, laminated on the backside with a geotextile of 500g/sqm, based on polypropylene (PP).
- Installation of the stainless-steel profiles and setting of the adhesive anchors (face anchorage).
- Application of a liquid-applied coating at the spillway.
- Perimeter seal, termination & transition details with the concrete facing shell structure and coatings.
- Penetrations details for the scaffolding fixations.
- Penetration details for the fittings and pipework.
- Transition to the dam structures via stretching shaft (expansion joint).
- Stainless steel profiles of around 1'500 m and around 3'000 chemical anchors.



1. Overview dam structure and the intake tower
2. Intake tower
3. Installation of the new geomembrane system