



Pump Storage Plant Limberg/ Kaprun III (AT)

Water & Frost Protection System

Country	Austria
Type	Hydro Power
Client	Verbund Hydro Power GmbH
Main Contractor	G. Hinteregger & Söhne, Marti Tunnel AG, PORR, Marti GmbH
Execution of the work	Renesco GmbH
Designer	Verbund Hydro Power, Geoconsult ZT, Tractebel Engineering
Construction Period	2023

Project Description

The Limberg III is one of the largest hydroelectric power plants in Europe, located in the Zell am See town, Kaprun municipality, to the southwest of the Salzburg city. It will connect the two existing storage lakes "Mooserboden" and "Wasserfallboden". The new electro-mechanical installations will be placed in a new underground cavern, gallery, and structure system.

The project includes the construction of a 3km-long and 7.3m-diameter headrace tunnel, along with a 770m-long and 5.8m-diameter pressure shaft and a riser. It also involves the development of the "Mooserboden" inlet and outlet structures, inlet tunnel, valve chamber with access and drainage, pressure tunnel, surge tank, and distribution pipelines. The cavern system for the project will comprise an underground powerhouse measuring 62m-long, 24m-wide, and 43m-high, located approximately 450m deep in the orographically right slope flank below the existing Limberg dam. It will also house a transformer cavern, generator discharge tunnel, and access tunnel.

Scope of Service

Supply & install of the water & frost protection system for the chamber (Drossen) using a 0.6mm thick reinforced PVC-coated polyester fabric lining with a high tear and tensile strength. The lining is fastened to a steel wire arched frame which is bolted into the rock and forms the theoretical profile. All fabrics are jointed together by hot air welding to guarantee a waterproof seal and stretched by PE ropes to give an aesthetical visual appearance.

- Tunnel cloth/ fabric (RTM 700-RP) is self-extinguishing and cannot be ignited. Tested/ specified according to ISO 9705, EN 13823, EN ISO 11925-2 and EN 13501-1.
- Installation of anchor bolts M16 for the membrane system, all hot dip galvanized (HDG)/ epoxy coated (PC).
- Data transfer from BIM to CAD to design the construction frames and to set the anchor bolts.



1. Installation of the cloth/ fabric
2. Finalized water & frost protection system
3. Limberg dam