

Small Hydro Power Plant Schwarzach, Austria

The establishment of environmentally sound energy sources such as hydro power plants is essential for a sustainable development and moreover necessary to help secure the quality of living and the well-being for future generations. Particularly Austria with its numerous mountain streams lends itself to the upcoming era of green electricity. A good example is the small hydro power plant in Schwarzach, Austria, which was built for an output of 9.9 MW. In order to reach this performance it was necessary to install a 4 km pressure line DN 1600, SN 10000, PN 10 – PN 16 with a maximum throughput of 4.6 m³ per second. The specifications of the tender allowed all pipe materials including cast iron, steel and GRP - wound as well centrifugally cast.



Not only excellent hydraulic properties for higher output and easy handling in impracticable terrain yet also economic aspects convinced the client to opt for HOBAS CC-GRP Pipe Systems. HOBAS® made use of a computer supported planning systems to offer a detailed item list as well as an elaborate CAD-key plan. The pipe course was simulated by computer to work out an economic installation plan. To save on bends, HOBAS® Pipes Austria suggested the utilization of flexible 3 m long pipe sections with 2.2° skew cut ends to achieve even smaller radii than with the angular deflection that HOBAS couplings generally allow. A detailed calculation showed that all in all 41 bends and the therefore necessary thrust blocks could be omitted with this simple method. This of course sped up the installation rate, reducing installation costs considerably. In order to avoid confusions on site the pipes were marked on the inside and outside.

The pressure tests with a test pressure of 24 bar were successfully completed on December 20th 2006 and the small eco power plant was put into operation producing electricity for the approximately 15000 homes of East Tyrol.



Overview	
Year of Construction	April 2005 – December 2006
Construction time	20 months
Length of pipes Laid	4000 m
Pressure Class	PN 10 and PN 16
Diameter	DN 1600
Stiffness Class	SN 10000
Application	WaterLine®
Special features	the installation had to be done close to the river Schwarzach and to the highly frequented highway. Due to the winding pipe course, the geographical situation, and narrow space the constructor choose to use HOBAS® CC-GRP pipes. For the constructor it was very important to have the least possible amount of bends in order to secure the hydraulic and driving power
Client	TIWAG Tirol, Eduard Wallnöfer Platz 1, 5020 Innsbruck
Contractor	Held & Francke Bau GmbH, 5020 Innsbruck
Turnover	1.581 Mio. €