

From sea to peak: GRP penstock for Breivikelva hydropower plant

1026 m Flowtite GRP pressure pipes DN 1200 are currently being installed as part of the penstock for the new hydropower plant Breivikelva in northern Norway. The challenging geographic conditions called for a special multi-stage delivery approach via ship, helicopter, and trucks.



The municipality of Beiarn is located just north of the Arctic Circle, in the middle of Norway's pristine nature and mountains which offer many outdoor activities to visitors. However, the mountain slopes are not only used for hiking: Since April 2019, a brand-new hydroelectric power plant is being built in Beiarn. Breivikelva hydro-power plant is fed by the river of the same name and will have an installed capacity of 9 MW. The penstock was planned in the material combination ductile iron / GRP and Amiblu supplied the required highly durable GRP pipes.

A total of 1026 m Flowtite pressure pipes DN 1200 were transported from the port of Gdynia in Poland to the bay of Beiarn on a cargo ship. Since Beiarn does not have a port, the ship had to anchor offshore and the delivery continued in a really exceptional way: A helicopter lifted the 6 m long pipes one by one and flew them to the storage area close to the building site of the future power plant at the bottom of the mountain. The GRP pipes' light weight and easy handling makes them perfect for helicopter transportation – in fact, the transfer time per pipe was no longer than 3.5 minutes. From the storage area, the GRP pipes are now being moved on to the trench with trucks.

The installation started in April 2019 and works on the hydropower plant are expected to continue until summer 2020, when operations should start. With a head of 305.5 meters and an annual production of 27 GWh, Breivikelva hydropower plant will then produce electricity for approximately 1360 households.

Left and below: A helicopter transported the GRP pressure pipes from the ship to the storage area at the bottom of the mountain.

PROJECT DATA

Country Municipality	Norway Beiarn
Year of construction	2019/2020
Application	Hydropower penstock
Installation	Open trench
Technology	Flowtite FW
Total length of pipe	1026 m
Nominal diameter	DN 1200
Nominal pressure	PN 20
Nominal stiffness	SN 5000
Client / investor	Salten Kraftsamband AS
Contractor	Fjellbygg AS

