

Keeping a hydroelectric power plant ice-free

Hydroelectric power plant Oberilzmühle, Passau, Germany



Wasserkraftwerke Passau GmbH
<http://www.stadtwerke-passau.de>

Operation
 1 hydroelectric power plant with OLOID Type 400

Period
 Test from January until March 2018

Success
 Reliable ice-free keeping of the dam shutter up to $-14\text{ }^{\circ}\text{C}$

The energy consumption is relatively low compared to the possible depth ventilation by compressed air with only 0.25 kW

Plant description:

The run-of-river power plant Oberilzmühle of the regional energy supplier Wasserkraftwerke Passau GmbH was looking for an energy-saving alternative to keeping the dam shutters ice-free. Even when the temperatures are very low, there must be no closed ice cover on the shutters so that the shutter system is ready for use.

OLOID-use and success:

In January 2018, an OLOID Type 400 was installed on floats in front of one of the 4 dam shutters for the test of keeping it ice-free and the development was monitored and documented by the operator.

In the test period, it was up to $-14\text{ }^{\circ}\text{C}$ outside temperature and the dam shutter with OLOID remained completely ice-free both at the dam shutter and in a semicircle behind the OLOID, so that the use of the dam shutter was guaranteed. The other 3 dam shutters showed significant ice formation in the same test period.

The OLOID Type 400 fulfilled the desired task with only 0.25 kW motor connection power due to the generated flow and the suction of the slightly warmer deep water layers. The installation was carried out by boat and could be easily realised without extensive diving.



OLOID Type 400 with flow direction to the dam shutter



Dam shutter **with** OLOID ice-free



Dam shutter without OLOID for comparison