

ELGEF Plus – Large dimensions

Ecological energy from the lake

Durable polyethylene piping system for CO₂-neutral energy recovery
Horw-Kriens (Lucerne), Switzerland

ELGEF Plus couplers and prefabricated T-pieces save valuable installation time and reduce costs.

Problem-free, time-saving and sustainable.



ewl (energy water lucerne) considers the reduction of fossil fuels as paramount for implementing Energy Strategy 2050. In a low-temperature thermal grid, natural lake energy is used as a sustainable heat carrier for heating and cooling approx. 7000 households. A polyethylene (PE) pipeline system and welded connections from GF Piping Systems came out on top for the material selection.

Project background

To meet the requirements of a sustainable energy policy, ewl is building a pipeline system for environmentally-friendly energy recovery from Lake Lucerne. Some of this natural lake energy is available to approx. 7000 households in Horw and Kriens as a heat source for heating or at a low temperature for cooling. This cuts CO₂ emissions by approx. 10,000 tons per year. The main lines of the new pipeline system (with diameters of d400 mm to d560 mm) extend over a length of approx. 5 km. The limited space and the pipe routing through the heavily populated area created additional hurdles during construction.

Selected technical solution

The comparison of materials confirmed polyethylene (PE) to be most suitable pipe material. The subsidence-prone subsoil presented a particular challenge, and this was overcome with ease with welded PE pipes. In addition, PE is exceptionally durable and reliable and the most economically sound choice. PE also scores points from an ecological perspective and is five times less harmful to the environment than cast iron. Thanks to the positive experience with ewl and pipeline construction company Alois Bader AG, ELGEF Plus electrofusion couplers and spigot fittings, as well as welding machines and tools from GF Piping Systems, were used in the installation process.

Accomplished improvements

"Being able to connect fixed pipe runs to ELGEF Plus couplers without a problem saves valuable installation time", reports back Anto Injic, Project Manager at Alois Bader AG. T-pieces prefabricated in the factory can be used to create reliable connections, even in confined spaces in the trench. These T-pieces are ready for use and can also be stored until needed. For Guido Huber, Project Manager at ewl, one thing is certain: "PE pipe systems lend themselves to especially efficient construction. And so the construction time can be significantly reduced."



Problem-free and economical: Fixed point connections with ELGEF Plus couplers.



Safe and efficient: Factory-fabricated T-pieces can be used to create branches in the trench simply, quickly and reliably.

Customer benefits

- Because energy networks made of polyethylene are corrosion-free, they are both durable and economical.
- Reliable and time-saving creation of branches with prefabricated, reduced T-pieces.
- ELGEF Plus couplers with active reinforcement make installation easier and save valuable installation time and costs, even when integrated at fixed points.

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