References

Weholite yields savings and smoother implementation

Uponor involvement

- 600 m Weholite pipes ø 1800/1950, 500 m PE 630 mm pipes, 7 500 m PE 160 mm pressure pipes

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New dry land fish farm which will produce 3,200 tonnes of rainbow trout annually is being build in Eckerö in the Åland Islands. Uponor Infra has provided design assistance and delivers the pipes and is responsible for their installation and welding.

The Åland Islands-based company Fifax Ab is currently building one of the largest fish farms in the Nordic countries. The aboveground facility is located in Eckerö, Åland, about 1.8 kilometres from the sea. Operating at full capacity, it will produce more than 3,200 tonnes of rainbow trout for the Finnish and Scandinavian markets annually. The facility piping contract was simplified and implemented at a lower cost by replacing the pressure pipes specified in the original plan with 1,800mm Weholite pipes.

Project Facts:

Location	Completion
Eckerö, Finland	2015
Building Type	Product systems
Industrial	Tailor made constructions
Project Type	
New building	

Partners

Consultant:
Deab Konsult
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The dry land facility under construction in the Åland Islands – an archipelago in the Baltic Sea and Finland's only autonomous region – will be one of the most advanced fish farms in the Nordic countries from an environmental perspective. It will be the first such facility in the Baltic region to recycle its utility water: it will not discharge water and fish nutrients into the sea.

This ecologically designed facility employs a closed recirculating aquaculture system and provides fish with ideal growth conditions. Unlike when raising fish in natural waters, the fish do not need to be fed antibiotics. It is also easier to monitor the feeding of the fish, thereby preventing overfeeding. This saves both the environment and costs. The plant is priced at about EUR 18 million and will be one of the largest dry land fish farms in the Nordic countries. The facility takes care of the process from beginning to end, from fish egg production to fish processing.

The building will measure about 15,000m2 with three basin areas. A total of 36 five metre-deep basins with a diameter of 12 metres will be built. The water used by the facility will be pumped from the Sea of Åland, located 1.8km away, to three water treatment plants.

In addition to its own water treatment plants, a biogas plant will be built in the area. It will utilise organic waste from fish processing to produce gas for use in the operations of the facility.

Revised design yields savings

Uponor Infra has been involved in the project since the design phase and will carry out the piping works required and the delivery and installation of pipes. Following the recommendation of Uponor Infra's experts, the original plans for the piping contract were revised to achieve a solution that yields greater cost-efficiency. Dan Engblom, a consultant at Deab Konsult who is responsible for the foundation and piping works in the project, says that the changes reduced the costs by about a third, compared to the original plans.

It was originally intended for the facility pipe system to be built with 630–800mm pressure pipes. ‘‘Uponor Infra recommended that the pipes be changed to 1,800mm diameter low-pressure pipes, which stand up well to the 0.5 bar pressure in the system.’’

Thanks to Weholite, the crisscrossing pipes specified in the original plans could also be simplified. In the solution now being constructed, the recirculating aquaculture system in each of the three basin areas is being implemented with two Weholite pipes connected to the fish tanks.

‘‘This solution is simpler, more rational and substantially cheaper,’’ says Dan Engblom.

‘‘Weholite pipes with a diameter of as much as 3.5 metres can be used to produce end-to-end pipe and tank systems as well as a variety of customised solutions,’’ says Tom Karnela, Sales Manager at Uponor Infra.

With their layered construction, Weholite pipes are durable, flexible and light. They are manufactured from polyethylene (PE) or polypropylene (PP) profile using spiral seams.

Harnessing experience yields benefits

The three-stage pipe installation work began at the turn of March and April. First-stage testing was carried out at the end of July, after which fish farming has been gradually started up. The whole pipe installation contract is expected to be completed at the turn of the year.

Engblom, who is responsible for overseeing the piping works, is satisfied with the progress of the work. ‘‘Pipe installation has progressed extremely well. Furthermore, Uponor’s pipe deliveries are flexible, which has facilitated the organisation of work at the installation site.’’

According to Tom Karnela, this project is a good example of why one should turn to Uponor’s experts in the early stage of projects. ‘‘When we come on board early, we can ensure that the customer reaps the best benefits from our expertise and is satisfied with the completed project.’’ Uponor Infra is delivering more than 10 kilometres of different kinds of pipes and other materials for the Fifax facility. The production facility is being delivered by the Norwegian company AKVA Group, the world’s leading producer of aquaculture technology.

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