

Safe water supply for an old shipyard and sawmill area



Uponor involvement

- ✓ Uponor Barrier PLUS pressure pipe, diameters of 40-63 mm | Uponor Barrier PLUS wraps

Safe potable water for an old shipyard and sawmill area

The Pateniemi waterfront area in Oulu, Northern Finland played a role in the history of Finnish industrialisation. In the mid-19th century, its shipyard built large merchant vessels, and later it was the location of one of the largest sawmills of its time. Now, the waterfront is entering a new era with the completion of a residential area for 2,500 inhabitants. Uponor Barrier PLUS pipes – which are both durable and non-permeable – ensure a safe supply of potable water in this area that was in industrial use for over 100 years.

The new seaside district of Oulu, Veneenveistäjänranta, is being built in Pateniemi, a waterfront area of around 70 hectares that was previously the location of a shipyard and sawmill. When completed, Veneenveistäjänranta will be home to 2,500 people – a unique area with over one kilometre of shoreline, its own marina and numerous parks.

The waterfront area was in industrial use for over 100 years. Shipbuilding began in Pateniemi in 1856, when businessmen in Oulu set up a shipyard – over the years, it became one of the largest Finnish shipyards of its time. It was a major employer in the city, with more than 400 people working there at its peak. It built ships such as barques and frigates that mainly brought grain to Europe from the United States, India and Australia.

When shipbuilding waned in the 1870s, a steam-powered sawmill was established in Pateniemi. Sawmill operations continued there for over 100 years until 1990.

The area is now owned by Aalto Construction Oy, with which the City of Oulu has made an agreement on cooperation and zoning.

Brisk construction in the area

Veneenveistäjänranta is now being built up at a rapid pace. Many construction companies are hard at work in the area. The new residential area is scheduled to be fully completed by 2030. One of the developers is the Oulu-based company Rakennus-Hanka Oy, whose houses are being built in three phases. Located a stone's throw away from the seashore, the first homes were completed in autumn 2021.

"We have two plots in this area – we'll build a total of 75 semidetached and terraced houses on them. This autumn, we'll

complete 18 residential units. The last of the houses will be finished by 2025,” says Ilpo Vakkuri, CEO of Rakennus-Hanka.

Diffusion-protected pipes are a requirement

After the closure of the sawmill, the soil in this area was studied and remediated thoroughly over a period of many years. Some of the soil had been contaminated by impregnating agents used at the sawmill. For example, the sawmill used chlorophenol- based KY-5 to protect sawn timber against blue stain fungi – the use of KY-5 was prohibited in the late 1980s.

After soil remediation, there were no longer any restrictions on the use of this area. However, the City of Oulu has wanted to ensure safe water supply – and has required the use of diffusionprotected pipes in the water supply network.

“Uponor is a familiar partner to us – we’ve been working together for over 20 years. When Uponor told us about the Barrier PLUS pipes, we decided to use them in this contract. We had no previous experience of these pipes,” says Ilpo Vakkuri.

The Uponor Barrier PLUS pressure pipe system was launched three years ago. It is the first 100% plastic pressure pipe system that makes it possible to safely build potable water lines in highrisk areas and contaminated soil. The durable Barrier PLUS pipes feature a seamless and non-permeable polymer layer structure that protects potable water against hazardous substances and both taste and smell problems.

These flexible pipes are fast to install. They are suitable for both new construction and renovation, and are fully compatible with standard PE potable water pipes.

Smoothly and on schedule

Vakkuri says that the installation of Barrier PLUS pipes for the houses that are currently under construction has been almost completed. All in all, about one kilometre of pipes will be installed on Rakennus-Hanka’s plots. The project uses pipes with diameters of 40–63mm.

The installation of the pipes has proven to be easy and smooth. “We’ve borrowed electrical welding equipment from Uponor for installing extensions and T-branches. Uponor also provided us with guidance on pipe wrap installation and good clear instructions that made our work easy.”

Barrier PLUS wraps ensure perfectly tight and secure seams. The installation of one wrap takes 10–15 minutes. Once the plastic wrap has been wound around the protective jacket of the pipe, a shrink sleeve is heated over it to seal it tight. The wraps and shrink sleeves have been pre-dimensioned for the pipes, so there is no need to measure and cut them to size at the site.

In addition to Barrier PLUS pipes, Uponor has delivered sewer pipes and wells for the yard areas as well as water and sewer pipes for the residential units. “The installation work has gone well and on schedule. We’ll continue with the installation of Barrier PLUS pipes in the autumn,” says Vakkuri.

Project Facts:

Location

Oulu, Finland

Completion

2030

Building Type

Municipal

Product systems

Potable water

Project Type

Uudisrakentaminen

Partners

Developer:

Rakennus-Hanka Oy

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An old shipyard and sawmill area in Oulu, Finland, is entering new era of a residential area for 2500 inhabitants. Due to history of the area, the contractor wanted to ensure a safe supply of drinking water in the area.

Building new residential area of Veneveistäjänranta





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