

Smoothly smooth the body line



Uponors roll

- ✓ PROFUSE PIPES ARE DURABLE | Profuse pipes are made of black polyethylene with a polypropylene protective jacket applied during manufacturing. The jacket protects the pipe from dents and scratches during transport, handling, and installation. The color of the protective jacket varies depending on the pipe's intended use. Blue protective shells are used for water supply pipes | Durable and flexible, Profuse pipes are ideal for trenchless installations. The pipes are primarily joined by welding, but mechanical fittings can also be used.

Smoothly smoothing

Iisalmen Vesi rehabilitated a main water line that was in fair condition but posed significant risks. The rehabilitation avoided the need to treat the old Hamanite pipe, as the pipes were replaced by lining the entire two-kilometer section. The protective jacket of the Profuse pipe protected the flow pipe from scratches during installation.

As recently as last fall, the Iisalmi water supply network included, among its cast iron and plastic pipes, a single 2.1-kilometer-long line in which water flowed through a himanite—or asbestos-cement—pipe. Built in 1970, the pipe had leaked a couple of times over the years, but otherwise it served its purpose well. However, himanite, known for its fragility, posed a risk. With bad luck, for example, nearby excavation work could break the pipe.

“We don't even have the parts to repair a himanite pipe anymore,” notes Iisalmen Vesi network manager Seppo Keskinen.

As a material containing asbestos, himanite also requires special precautions when working on the pipe and when handling waste material.

The motivation to replace the pipe grew stronger when Ylä-Savon Vesi Oy, a wholesale water company owned by five municipalities, renovated the water plant in Kyllikinranta, from where the trunk line in question runs toward the center of Iisalmi.

“That's when we started thinking about how to flush and disinfect the lines, and the risks associated with the pipe came to the fore again. We decided to renovate it,” says Ulla Tyrväinen, Director of Iisalmen Vesi.

Easy to cross under the railroad tracks

Lining emerged as the best option early on, even though the line runs through sand that is easy to excavate.

“More buildings have been constructed in the area since the original installation, and there are also long road crossings along the route. We decided that pipe jacking would be the most convenient way to renovate,” Tyrväinen explains.

The line also crosses under the railroad tracks.

“By using pipe jacking, we avoided complicated arrangements and permit applications,” Seppo Keskinen notes.

Permits were only needed for a couple of jacking trenches that were located near the tracks.

Iisalmen Vesi selected Uponor Infra as the main contractor for the pipe jacking and chose Profuse pipes.

– The Profuse pipe is usually the best choice for pipe jacking, as the pipe’s polypropylene protective layer protects the pipe during installation, notes foreman Veli-Matti Hakala from Uponor Infra.

Without compromising on performance

Work began in late October with the cleaning of the old pipe. According to Hakala, cast iron pipes usually have to be chiseled out to make room for the new pipe. In contrast, the inner surface of a Himaniitti pipe only collects slime, which can be removed by washing.

The pipes were cleaned using a pigging system by SPC Vesitekniikka Oy of Tampere. Foam plastic cylinders known as “pigs” were pushed through the pipe using water pressure, entering at one end of the waterworks and exiting at the other. Along the way, they scrubbed the old pipes clean.

“We managed to clean the entire line in a single pass,” Hakala says.

According to him, the 280-millimeter-diameter Profuse pipe fit without any problems into the 300-millimeter-diameter Himaniitti pipe, so there was hardly any need to compromise on the line’s performance.

“It was interesting and surprising how tight the clearances were during the lining process. There wasn’t much room for error,” says Keskinen.

The line carries over a thousand cubic meters of water per day, which is about one-fifth of the city’s total water consumption. Iisalmi has a population of about 22,000.

Initial section to be operational in a couple of weeks

The jacking project was divided into 150–200-meter sections based on the line’s valves and branches.

Pyykkönen Yhtiöt Oy of Paltamo dug a total of

14 trenches for the start and end points of the lining, through which a truck winch pulled the new pipe into the old one.

Uponor

Infra’s installers constructed the line using 12-meter pipes joined by butt welding.

The pipe-in-pipe installation began immediately after flushing, starting from the city end, and the line was put into service as the installation progressed. Water was already flowing at the starting end after just a couple of weeks. A temporary surface water line

was needed for only one property.

“We ran water through it day and night, so it didn’t freeze, even though the temperature had already dipped below freezing,” Keskinen explains.

According to him, the pressure gauges did freeze during pressure tests, and the line valves had to be thawed with steam.

Seamless cooperation

In addition to the contractors, Iisalmen Vesi’s installers and network manager Keskinen participated in the work. They were responsible for opening and closing the valves. Hakala praises the cooperation as seamless and so flexible that it was easy to make small changes even in the middle of the work.

“The collaboration went really well, and Uponor Infra’s foreman was truly knowledgeable,” Keskinen adds.

He notes that the smooth progress of the work was reflected in the costs, and the budget was even underspent.

– The work stayed well on schedule despite the fact that proper winter set in during the final stages of the project, says Tyrväinen.

The project was completed at the turn of the year, and finishing touches will be made in the spring.

– Uponor will clean up the trenches once the snow has melted.

Projektfakta

Location

Helsinki, Finland

Färdigställt

2017

Byggnadstyp

Tomtmark

Product systems

Tryckrörssystem



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