



NIROFLEX Project Gothenburg, Sweden, 2025

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Pipes
Pioneers in Infrastructure



Project

In Gothenburg's oil harbor, Scandinavia's largest port and a central hub for maritime trade, Stena Oil acquired a bunker tank with a storage capacity of 10,000 cubic meters, bringing the company's total tank volume to over 100,000 cubic meters. Stena Oil operates its own bunker vessels in the port, supplying a wide range of ships with fuel, heating oil, lubricating oils, and other oil products. This strategic expansion increases security of supply and gives the company additional flexibility in the increasingly demanding maritime fuel trade.

In order to integrate the tank into ongoing operations, a high-performance heating system had to be installed. This was to ensure that oil products remain liquid even at varying outside temperatures. Conventional heating systems often lay long heating pipes in a serpentine pattern on the tank floor. However, this has the disadvantage of covering almost the entire floor, which makes cleaning difficult and leads to longer downtimes.

The aim was therefore to find a solution that would heat the tank evenly and leave most of the bottom free. BRUGG Scandinavia, formerly BRUGG Sweden, developed a system using NIROFLEX DN 50 – a flexible, spiral-welded stainless steel pipe with high thermal transfer performance and mechanical strength.

The high degree of prefabrication of these systems, for which BRUGG Pipes is renowned, enables particularly short installation and downtimes. A total of around 520 meters of piping was installed, divided into four self-contained heating circuits, which were delivered as prefabricated modules and assembled on site.

The pipes run vertically along the tank walls. This causes the warm liquid in the tank to rise and the colder liquid to sink, resulting in uniform mixing. The free floor area makes inspections and cleaning much easier. The spiral shape of the pipes increases the heating surface, making heat transfer more efficient. In addition, the modular design allows adaptation to varying media, operating pressures, and temperature requirements.

The project was initiated in 2021 but was postponed due to necessary structural renovations of the tank container and was finally completed in 2023. The planning and prefabrication phase took around four to five months, during which detailed design calculations, drawings, and logistical coordination were carried out.

On-site installation was completed within a timeframe of around three weeks. An additional advantage of the new solution for the assembly operation was the reduced welding effort, as longer pipe lengths with fewer connection points could be used. The prefabrication of the heating modules significantly reduced assembly times and interface risks.



With the implementation of this heating technology, Stena Oil achieves increased thermal efficiency, shorter commissioning times after maintenance intervals, and a reduction in unplanned downtime. The free tank bottom space leads to a measurable reduction in cleaning costs and thus to lower operating costs over the entire life cycle.

As the first installation of its kind in Sweden, the project highlights the potential of innovative pipe systems for applications in the maritime energy sector, particularly in terms of operational efficiency, ease of maintenance, and technical adaptability to changing market requirements.

