Project:

Please make it pronto: Construction of new supply lines in Venice

egeplast

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Project data	
Project description:	New installation of over 22 km of drinking water and fire protection lines
Challenge:	Streams of visitors, narrow lanes and restricted working areas in the lagoon city
Solution:	Pre-welding of the flexible pipe runs, multiple transportation to site using canals and pipe insertion from boats
Installation:	Mostly trenchless installation using the HDD method
Pipes:	Drinking water pipeline (blue) • SLM® RCplus 400 x 36.3 mm Fire mains (red) • SLM® RCplus 125 x 11.4 mm • SLM® RCplus 225 x 20.5 mm
Companies performing the work	Client: Veritas S.p.A. Constructor: Anese S.r.l.. Pipe supplier: egeplast Italia S.r.l.

Small starting pit for horizontal directional drilling during trenchless installation instead of digging up roads.

The narrow lanes and numerous bridges in the lagoon city of Venice presented the entire construction team with a real challenge when building pipelines to supply water and extinguish fires. Since open installation was to be avoided where possible to prevent damage to roads, the SLM® RCplus pipes with protective coating were mainly installed using the black box method.

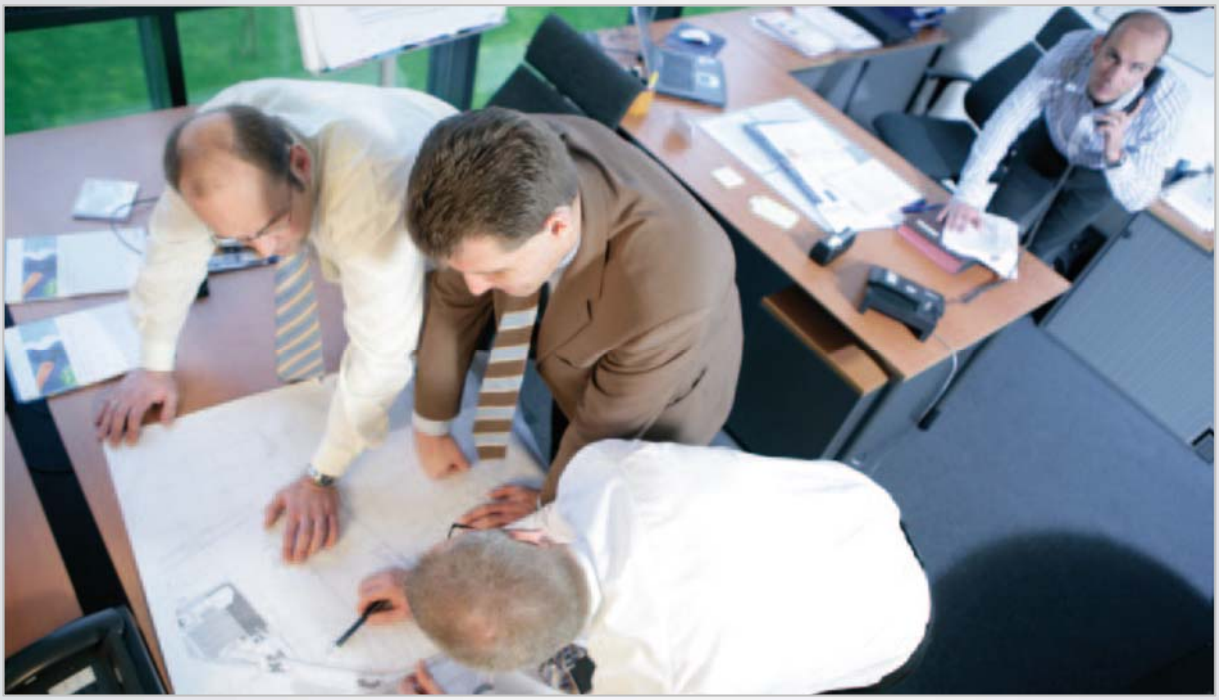
More than ten years after the terrible fire catastrophe in Venice in which the old Gran Teatro La Fenice burnt down, Venice is the first city in the world to get its own pipeline that is solely intended to provide water for extinguishing fires. This is because of all things it was a lack of water at that time that hindered the Viennese fire service from putting out the fire quickly. The new bright red pipeline providing water for extinguishing fires is over 22 km long, has the dimensions 125 x 11.4 mm and 225 x 20.5 mm and is designed to prevent these kinds of catastrophes occurring in the future. A new drinking water pipeline next to this with a total length of 600 m and the dimensions 400 x 36.3 mm is to replace the now antiquated pipelines. The sales company egeplast Italia S.r.l., which was founded in 2005, was awarded the contract for both building projects by Veritas S.p.A., the public utility company responsible. Work was performed in cooperation with the pipeline contractor ANESE S.r.l. The installation work has been made more difficult not only by the 10 million visitors that come to the city every year, but also in particular by the narrow lanes and numerous bridges. „The "latter", explains Daniele Cucchiarini (sales manager at egeplast Italia), "calls for the deployment of polyethylene pipes since almost no other materials have the same flexibility". Venice has been listed as a UNESCO World Heritage Site since 1987 which means that extra care needs to be taken during installation work. Pipelines were inserted using trenchless installation wherever possible to protect the streets of Venice. Use of this modern technology not only permitted a reduced building period but also guaranteed the minimum disturbance to traffic compared to open installation methods. The SLM® RCplus with protective coating from the egeplast Werner Strumann GmbH & Co. KG product range was selected both for the new drinking water pipeline and the pipeline for the fire services. In this pipe system the core pipe made from PE 100-RC is additionally protected against grooves and scratches by an abrasion-resistant protective coating made of mineral-reinforced polypropylene; this means that all damage is taken up by the protective coating. This property enables the pipe to be installed in the Viennese soil using trenchless methods. Construction work to install the drinking water pipeline has already been successfully completed, while the work to install the pipeline carrying water for extinguishing fires is scheduled to take until the middle of 2010.

The pipes are welding with precise specifications about temperature, contact pressure and cooling time.

Welding work on the pipeline providing water for fire fighting along the canal.

Pipes were also transported on the Canal Grande.

Consulting:



The selection of plastic pipe materials and systems for underground installation has extremely long-term implications. Designed for a service-life of several generations, pipelines are scarcely accessible for retrospective modification once they have been installed:

- High-value surface occur
- Building construction follows underground activities
- Repair costs in case of damage can be
  a multiple of the original investment amount
- Diversion of traffic and blocking of roads
  is scarcely possible with today's high traffic densities

For these reasons, planners, project clients and operators of piping systems are confronted with the challenge of gathering the best possible knowledge of the potentials and limitations of pipe materials before a decision is made. In addition, the costs for underground engineering must also be taken into account. Actual pipe-system costs rarely make up more than 15 % of total costs, whereas the underground work and restoration of the surface account for 85 % or more. The use of trenchless installation methods thus presents significant cost-reduction potentials.

The egeplast team of consultants will be happy to help you in every decision-making phase.
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