



Polybutene
Piping Systems Association

Case Study

Cavalaire-sur-Mer, FR



Thermaflex | Flexalen



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Cavalaire-sur-Mer is a French municipality with just over 7,000 inhabitants. It is located at the Côte d'Azur between Saint-Tropez and Le Lavandou. Its location on the Mediterranean coast sparked the innovative idea to use the seawater for heating and cooling. For this ambitious project, Thermaflex provided a solution for the thermal water distribution, using Flexalen pre-insulated pipes made from Polybutene-1 to secure reliable, and sustainable heating and cooling for the post office building in the city. In summer the seawater is used for cooling, and in winter for part of the heating. So the system functions as a heat pump.



Seawater for temperature control in Cavalaire-sur-Mer

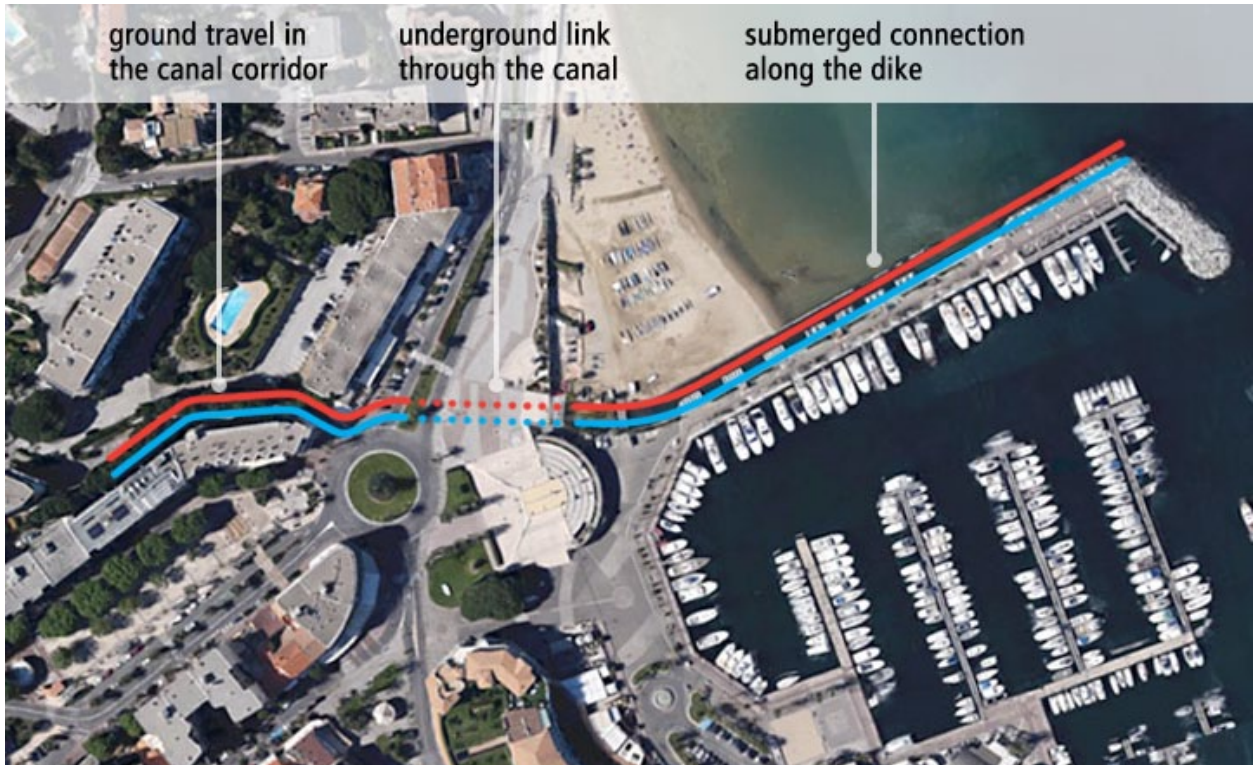
The sea is my heat pump

Beside the establishment of new buildings and the restoration of the town hall, a 'high environmental quality' approach was able to be realized, namely – improve the comfort of users at affordable cost, by efficiently maximizing the use of renewable energy. To achieve this, the alternative chosen by the city was a geothermal heat pump using seawater.

Goals

The biggest challenge was to find a piping material that was resistant to seawater – and the PB-1 in Flexalen is highly chemical resistant and perfectly suited for the job! Additionally, the polyolefin insulation foam does not absorb water, so there was no risk even if the insulation came in contact

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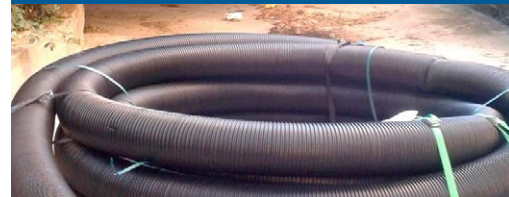
with seawater. Once started, the seawater pump would create a vacuum inside the pipe - Flexalen provided the best possible deformation resistance. Installation time was also significantly reduced due to the flexibility of the material, its availability on coils, and its easy weldability.

Results

The pipes were installed in a channel from the sea to the connection point at the post office. The pipes had to run underneath two roads and a pedestrian area. For the flow pipe, the choice was made for 125 mm diameter because of the pressure loss due to the length of the pipe and the difference of height in the trajectory. Several coils were supplied for this project, and electrofusion welding was applied for the connection between these coils. At various points along the length of the pipe, fixation points were made for the installation and welding, as well as securing the pipes from moving.

STATISTICS

- 7,000 inhabitants use the service of the post office
- 125 mm pipe diameter for flow
- 110 mm pipe diameter for return



Organisations

- Municipality of Cavalaire-sur-Mer (Project Initiator)
- Cabinet "Grégoire & Matteo", Sud Equip (contractor)
- SNEF from La Seyne-sur-Mer (Installer)

Cavalaire-sur-Mer, FR



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