



Weholite, KWH Pipe's structured wall piping system, is easy to install on the sea floor even when the diameter exceeds two metres; the pipeline can be completely welded together on land and anchored to the sea floor without expensive external weights, since its hollow profile wall can be filled with cement mortar to weight it down.

Polyethylene REPLACES CONCRETE

Polyethylene pipes replace concrete in power station's cooling water intake.

Alstom has now used polyethylene piping instead of concrete in a power station's cooling water intake for the first time. The advantages of polyethylene piping are that it is easy to install on the sea floor and has a life expectancy of at least 50 years in salt water compared to about 25 years for certain concrete pipes. The gas-powered combined cycle power plant was built in Fos-sur-Mer in southern France for CyCoFos, a power company that is a subsidiary of Gaz de France.

The pipe used was Weholite, one of the few polyethylene pipes in the world that can be made in dimensions of more than two metres. What makes the pipe unique is that it has a hollow profile wall that can be filled with concrete to weight it down. The piping is practically maintenance-free since all joints are welded and polyethylene does not corrode in salt water.

These qualities were factors behind the decision to bring the cooling water into the power station through polyethylene pipelines instead of using pipes of less advanced materials.

"Normally, external weights are used to weigh

down polyethylene pipes, but it isn't practical when we're talking about pipes with diameters of two to three metres that are going to be buried under the sea floor for safety reasons," says **Christian Vestman**, Project Manager at KWH Pipe. "By using non-hardening cement mortar, the pipe retains its built-in flexibility, which means it can withstand different load situations on the sea floor better than rigid pipes."

Stephane Delaplace, who works for Alstom's subcontractor Entreprise Jean Negri & Fils, says it was no trouble to install the polyethylene piping:

"The job involved four parallel pipe sections of about 70 meters each. The piping was welded together in advance on land and transported as a whole to the installation location. They were then filled with water and sunk into the pre-dredged channels on the sea floor. Finally, the piping was covered with sand and rocks so the sea floor looked natural again."

"The actual underwater work took less than a day per pipeline," says Delaplace. "There is no risk of leakage in the piping, which is a risk with sleeve couplings."