

Protecting the Soreq Desalination Plant using Geotube®



The Challenge

The Soreq desalination plant operates on a reverse osmosis process and consists, inter alia, of the desalination plant, a pumping station and facilities to treat the incoming water. For operational purposes, an excavation site was established that includes two vertical shafts for horizontal drilling purposes for the jacking of water pumping pipes to the ocean depths. The horizontal drilling shafts are located about 70 meters from the water line.

Due to the concern that seawater will flow into the construction site and into the borehole shaft during stormy weather, a decision was taken to protect it from a surge in sea level and from the waves.

The Solution

The technology chosen for this operation was the use of Geotube® - Geotextile Containers filled with sea sand and laid as a barrier between the waterline and the construction site.



The Geotubes® are made of woven geotextile fabrics sewed into a sleeve, which are designated to separate the sand from the water. In marine engineering the Geotubes® are used as breakwater - Separate the sand - which accumulates inside them, from the water filtered outwards through them.

The Geotube® is designated for marine jobs and excels in high resistance to abrasion and exceptionally strong seams.



The Execution

At the initial stage, excavations were carried out to planned elevations and a protective scar apron was laid down under the Geotube®. The scar apron is used to prevent sand drift occurring under the Geotube®.

At the next stage, the Geotube® containers were filled with sand – the filling process included pumping seawater obtained by a process of dredging, emanating from the vertical borehole shaft.

For maximal integration into the environment, the Geotube® selected for operation was of a color similar to that of the sand.

In total some 13 Geotube® sleeves were laid, each of a length of 20 m. and at a height of 2 m. above the excavation level, and at 3.2 m above sea level.

The Results

Geotubes® of an overall length of some 260 meters were laid around the construction site. The barrier rose to a height of 2 meters and at a height of 3.2 m. above sea level.

The Geotube® containers protect the engineering facility from the waves and from a surge in sea level during storms.

The system successfully survived the winter storms.



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- ◆ **Execution – Admir Environment LTD, 2011**

