



### Coarse NaCl (Salt) Dredging Tailing

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**ICL group,  
Dead Sea Works  
Israel | 1992**  
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#### Working conditions:

Extremely highly corrosive and highly abrasive material. Exposure to constant direct sunlight. Challenging ambient temperature ranging from 6°C to 46°C (43°F to 115°F)

#### Pipes used:

Pexgol 400 mm OD Class 10, 450 mm OD Class 10 and 500 mm OD Class 8

#### Application:

Dredged material transportation, at 30% concentration with particles size from 2-300 mm

#### Length:

More than 5,000 meters

#### The Challenge

The Dead Sea, located in the Jordan Rift Valley of Israel, is 9.6 times saltier than the ocean, and also known for its high salinity.

The high salinity of brine and the water evaporation creates a constant build-up of salt crystals which requires to be removed. These rough crystal formations are highly abrasive and corrosive. The high temperatures of the area makes material selection more challenging. The salt slurry properties were so harsh that the dredging operators found it necessary to replace their original pipeline every three months due to wear related failures. Before turning to Pexgol, our client tried a number of alternative piping solutions without success:

- Rubber pipes – which proved to be easily damaged by the severe weather conditions and harsh abrasion. This required expensive replacement and maintenance.
- Steel pipes – which were also shown to be easily damaged by the tough climate. In addition, the pipelines weren't flexible enough, and salt accumulated inside the pipe, causing backup, clogging and low performance.
- HDPE pipes – which did not survive the abrasion of the coarse environment, and as a result, endured a very short lifetime.

#### The Solution

Pexgol proved to be the best solution for the client and lasted throughout the first phase of the project without experiencing any failures in the pipeline. The second phase of this project is scheduled for 2017.

By selecting Pexgol, the operator was able to increase his MTBF from 2,500 hours to 43,000 hours (or from three months to 60), which happened to be the remaining lifetime of the project. Without Pexgol, the client would have had to change the entire pipeline almost 20 times during the life of the project.



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### Advantages

- High resistance to wear:**  
Pexgol is the preferred solution for abrasive materials transportation. Typically resists three times more than HDPE and twice more than steel.
- Excellent chemical and corrosion resistance:**  
Pexgol pipes can resist a wide range of chemical agents, slurries, toxic and radioactive materials.
- High temperature resistance:**  
Working temperatures can range from -50°C/-58°F up to 110°C/230°F.
- Superb internal and external corrosion resistance:**  
Our pipes are proven to withstand decades of exposure to corrosive environments, with non-stop performance in some of the world's harshest environments.

- Low weight:**

Compared to steel or rubber, Pexgol's solution results in reduced transportation, storage and labor costs due to lower weight per meter.

- Long pipe sections:**

Pexgol's pipes can be supplied in long lengths coils, reducing number of joints, installation time and risk.

- Creep and impact resistance:**

Pexgol's crosslinking piping solution can withstand high amounts of axial and radial stresses and are highly resistant to impact, fracture and fatigue. Our pipes are also completely resistant to cracks – even when dragged over sharp rocky terrain and coagulated salt crystals.

