

SOCAR TURKEY AEGEAN REFINERY (STAR) PROJECT İZMİR, AEGEAN COAST, TURKEY

Reinforced Soil Walls and Slope Reinforcement

Problem

The STAR Aegean Refinery is believed to be the most significant private sector investment project in the recorded history of Turkey. The petrochemical refinery has an estimated investment value of USD 6.3 billion. It is also located in an earthquake sensitive area.

Having acquired the project site which is located in an earthquake sensitive area, STAR Rafineri A.S. decided to enlarge it. Due to the site topography, a total of 13 terraces were planned which shall be mostly used for supporting the large tanks storing the by-products.

Because the site is prone to high seismicity, the selected solution needs also to be highly resilient to withstand the earthquake forces, high pore water pressure, very steep slope and substantial subsurface water flows.

Solution

Tekno Maccaferri conceived a hybrid reinforced soil solution for these tall retaining structures combining their Terramesh® System and ParaLink® high strength geogrids which would enable the soil to accommodate greater loads and stand at steeper angles.

The system is based on the principles of soil reinforcement where tensile elements, i.e. high strength polymeric geogrids, are introduced in the soil mass as reinforcement to retain the soil vertically, or at a steep slope.

The flexibility of Maccaferri's hybrid solution over conventional retaining structures made it the ideal choice for this high terrain project due to its inherent ability to accommodate differential settlements and vibrations due to dynamic forces.

The free draining nature of the fascia will also help the dissipation of pore water pressure in a very effective way.

Client: State Oil Company of Azerbaijan Republic (SOCAR)

Products used (Qty.)

- Terramesh 40500 pcs

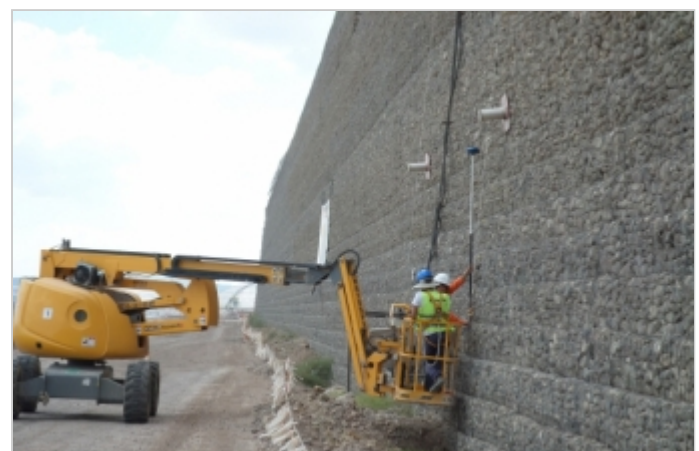
Date of construction: 01/2013 - 12/2018

[Google Maps](#)

[Google Earth](#)



Panaromic view of Terramesh System



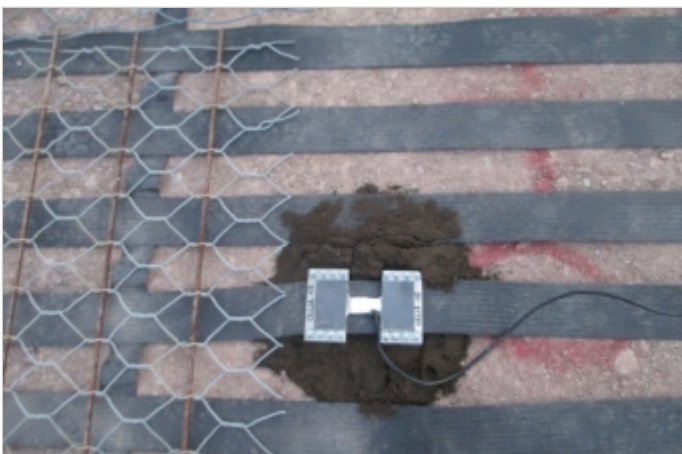
Positioning the devices for monitoring



View from the berm



During the installation phase



Strain-gauges



Service road

