

ÇÖPLER GOLD MINE RETAINING WALLS

ERZINCAN, DOĞU ANADOLU, TURKEY

Reinforced Soil Walls and Slope Reinforcement

Problem

Çöpler Gold Mine located in the province of Erzincan, needed a 20m high retaining wall for the grinder area to be formed on a terrace on the slope of a hill. It was also necessary to construct a retaining structure for the crusher wall having a height of 14m which would allow the ore to be dumped into the crusher brought by trucks from the open pit mine.

An economic and flexible retaining structure is required to withstand the strains and loads from the height of the grinder wall and the trucks weighing 40-60 tonnes feeding the crusher with the ore.

Solution

The traditional concrete systems that are common in the mine fields are rigid structures. Due to continuous high vibrations, cracks occur in the concrete structures.

These structures that cannot adapt to the changing environmental conditions are replaced with geogrid reinforced retaining structures which are environmentally friendly, flexible and technologically new products. For this reason, Anagold has decided to use, systems developed by Maccaferri Turkey, the leader in the mining field for such solutions.

After calculating the overturning, sliding, internal and external stability analysis with MacStars-W, a software that can analyse the interaction of geogrids with gabion baskets, Maccaferri Turkey had decided that the most appropriate retaining structure is the Terramesh System reinforced with ParaLink geogrids.

In practice, a backfill material of crushed stone having a maximum particle size of 76mm known as structural fill, has been laid and compacted in layer thicknesses of 25-33cm. After the calculations it has been determined that ParaLink 300kN and 200kN geogrids shall be installed with a 1m vertical spacing at the bottom and 2m vertical spacing on top of the walls. The 20m high grinder and 14m high crusher walls having a total surface area of 4685m² was constructed in 4 months.

Terramesh System Retaining Wall will continue to work continuously with its flexible and robust structure in Erzincan province, which is a region where seismic forces can be encountered continuously.

Client: ANAGOLD MADENCİLİK

Designer / Consultant: MACCAFERRI TURKEY

Contractor: ANAGOLD MADENCİLİK

Products used (Qty.)

- Terramesh 4880

Date of construction: 07/2016 - 12/2016



Grinder Terramesh System Retaining Wall



Crusher Terramesh System Retaining Wall



Paralink



Terramesh System



During construction



Macdrain and Paralink



Terramesh System