

HAR MADENCİLİK COAL STORAGE AREA DİLOVASI, KOCAELİ, MARMARA, TURKEY

Vertical Walls with Concrete Facing Panels

Problem

In the construction of the new coal storage facility belonging to Har Madencilik, which operates in Kömürcüler OSB, located in Dilovası district of Kocaeli province, due to the elevation differences in the construction area, the platforms where the storage areas will be placed have to be built on the gradual retaining structures. During the project design phase, contact was made with the customer, a field trip was made, topographic maps were examined, and business-related information was obtained in the meetings with the customer. In the light of this information, a solution was sought considering the fact that the construction equipment is in contact with the wall surfaces, the need for vertical walls to prevent loss of space, the weak ground in the areas where the walls will sit, the short construction period, and the demand for an economical and long-lasting solution. In addition, the excessive dead and live loads that will occur on the wall and the fact that the zone is in an earthquake zone at the 1st degree are the main factors affecting the solution of the problem.

Solution

In the first meeting with the client, considering the problem and the requests, it was concluded that MacRes retaining wall with geosynthetic strip is the most suitable solution for this project among the Maccaferri solutions. The MacRes design, consisting of long polymer strips (Paraweb), was made for the Project, where the maximum Wall height is 9.00m. The design is made for the 90 ° front surface slopes of the 14.00 cm thick reinforced concrete front surface elements with a total surface area of 4.100.000 m² in whole project for the first 5.00m as 4.00m and the for the rest as 6.00m.

During the MacRes design, in addition to 20 kN / m² live load and 60 kN / m² dead load values, 0.4 g earthquake acceleration was used in the design since the region is a 1st degree seismic zone. The panel fabrications of the MacRes system were produced in the mobile precast workshop established on the construction site.

The structural filling of the MacRes retaining wall was solved by providing the necessary gradation by passing the material from the limestone block in the project area through a crusher.

Client: HAR MADENCİLİK SANAYİ VE TİC.LTD.ŞTİ.

Designer / Consultant: MACCAFERRI TURKEY

Contractor: HAR MADENCİLİK SANAYİ VE TİC.LTD.ŞTİ.

Products used (Qty.)

- ParaWeb	1.400 m2
- MacRes	1.400

Date of construction: 07/2012 - 06/2013



MacRes Retaining Wall Construction Phase



MacRes Retaining Wall



MacRES



Coal Storage Area



MacRES



MacRES



MacRes Retaining Wall