

QAFE THANA TUNNEL - A LARGE CIVIL ENGINEERING WORK IN ALBANIA

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Qafe Thana tunnel is a very important civil engineering work in railway Tirana Pogradec, Albania. This one has a length 3015m and an opening surface 35m square. The height of rock mass upon the tunnel arrives until 275m. Having a very complicated geological setting being in contact of two main tectonic zone (Mirdita zone with Korabi one) we have proceeded a lot of geological works, also and geophysical ones. Also are provided and hydrogeological observations. Real geological section of a tunnel showed that the sector is very complicated by block tectonics as well as nappe tectonics, giving a classic view of a tectonic melange of ultramafics. The tectonics has influenced on the rock mechanics features, mainly of the ultramafics, that are transformed into serpentinites with greater plastic characteristics than limestones. Also the tectonics has influenced in the change of mining pressure. The limestone have good physico - mechanical characteristics. Generally they are massive and well stratified. From the analyses is observed that resistance on compression is 600 - 1200 kg per square cm. The coefficient of the strength is 4 in weak zones and 9 in the strong ones. The limestones are accompanied always with karstic waters that are more abundant at the tectonic contacts between limestones and ultramafic rocks. Having a good compactness the intervals of limestones are not betonned in the tunnel, only in some small intervals where the limestones were in contact of the ultramafic rocks. The ultramafic rocks are represented by harzbugites and serpentinites. The harzbugites are met as blocks with different dimensions and tectonic faults with large zones millonitized. In the weak intervals are happened a lot of collapse phenomena especially in the interval 1700 - 2500m of tunnel. In this interval is used a strong constructive covering. The serpentinites are the main rocks of ultramafic tunnel. Constituting the tectonic melange between the compacts blocks. During the works of the tunnel, the anomalies of mining pressures are exposed as the main problem by engineering geology viewpoint. That work has been a nice experience for the further typical areas in Albania.