

It can be concluded that the Zalau power plant ash can be used in mortar compositions 5 wt% replacement of cement by ash brings both economical and qualitative benefits.

Protection measures against geological failures, during the construction of Thessaloniki - Kavala Section of Egnatia Highway in N. Greece

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The present paper refers to the major part of the Egnatia highway, about 100 km long, which connects Thessaloniki and Kavala cities in North Greece. Actually, it is divided in three parts: i) Nymphopetra-Asprovalta, about 40 km long, ii) Asprovalta-Strymonas, about 20 km long and iii) Strymonas-St. Andreas, about 40 km long. The highway has already been constructed. Driving from the west to the east, the highway, at the beginning of Nymphopetra-Strymonas part, passes nearby Volvi lake, at the foot of Vertiscos Mountains. Easterly, it passes through Kerdillia Mountains, Strymona's river and it leads to Pangeo's mountain, ending through Symbol Mountains. The highway also passes through five tunnels; i) Vrasna tunnel, which is located at Nymphopetra – Asprovalta's part, ii) Asprovalta's tunnels, which are three tunnels locating at Asprovalta – Strymona's part and iii) Symbol tunnel, which is located at the last Strymonas – st. Andrea's part. The paper describes the support measures against geological failures during the construction of the highway. For this purpose, the mechanisms of sliding and rock falling procedures were studied. As far as slopes concern, the orientation of the discontinuities and the poor quality of the rock mass, that creates cyclic sliding, were responsible for the instabilities. Rainfall also helps landslides to be occurred. During the tunnelling excavation, the sliding along a plane, the décollement from the roof and the fall of wedges were the common failure causes.

Historical faulting in Aghios Konstantinos area (central Greece), based on archaeological indications

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Aghios Konstantinos lies on the foothills of the Atalanti fault system scarps. The area is located in central Greece and the fault system is the primary morphology-controlling agent. It defines the west shoreline of northern Euboea gulf and is associated with several historical earthquakes.

Morphologically this zone forms steep high bedrock scarps, on the foot of which extensive colluvial deposits are observed. Several minor fault scarps have been mapped and they were classified in three classes: a) bedrock fault scarps with visible fault plane, b) soft-sediment scarps with visible fault plane and c) soft-sediment scarps with no visible fault plane. The minor scarps are generally aligned in an échelon pattern, following the general WNW – ESE trend of the major fault zones, while their general dip direction is towards the NNE. Fault analysis shows that there is extensive tilting of hangingwall blocks, as well as of the minor faults themselves. Faults tend to “lock” with each other forming a complex pattern that is inherited to the overlying Upper Miocene-Pleistocene and Holocene sedimentary cover.

A small settlement was found at “Karvouna” site, west of Aghios Konstantinos, during the works performed for the construction of a new segment of E75 highway. This settlement comprises of low-lying houses, storage rooms and a small temple. A larger and more