

CONSTRUCTION AND PERFORMANCE OF ROCK EMBANKMENTS IN HIGHWAY ENGINEERING

A. Mouratidis

Professor, Aristotle University of Thessaloniki, (GR)

ABSTRACT

Major highway projects usually necessitate extended earthwork. In mountainous areas especially motorway alignments are established through significant geotechnical works and concrete structures: high embankments and cuttings, big tunnels and viaducts. Nowadays, in case of tolerant environmental conditions, high embankments ($h > 30\text{m}$) constitute a current practice of formal application.

In most cases, high motorway embankments are constructed using rock fill material. Advantages of rock material are namely the availability, the high shear strength, the low deformability, the low cost. However, construction of a rock embankment is a complex engineering process consisting of specific site actions such as remoulding and mixing the material, performing effective compaction of layers and preventing erosion by appropriate slope surfacing.

The present paper deals with the conditions of construction of rock embankments, the advantages and the drawbacks of the applied technique. It also presents issues of sequential construction and of quality control which are typical features of rock embankments.

In view of big forthcoming highway projects, this technique may become comprehensive to road designers and contractors and be efficiently applied through a rigorous frame of rules and specifications.

KEYWORDS: highway engineering, earthwork, embankment, rock, construction