

Design, Construction, Monitoring and Modelling of Albagés Earthdam. A Case History

Núria M. Pinyol^{1,2}, Eduardo E. Alonso²

1- Centre Internacional de Mètodes Numèrics en Enginyeria (CIMNE), Spain

2- Civil Engineering School, UPC, Barcelona, Spain

Email: eduardo.alonso@upc.edu

Abstract

A zoned earth dam 40 m high is analyzed and modelled using a numerical code able to deal with unsaturated-saturated soils and the coupled hydro-mechanical phenomena. The paper discusses the selection of the materials for the design of the dam. The dam construction was modelled at the design stage (a type “A” calculation) and results are compared with actual measurements registered during construction until the time when the dam reached two-thirds of the total final height. The limitations of the type A model are discussed and an updated model is presented taking into account compaction data and field tests performed during construction

Keywords: Earth Dam, Unsaturated Soils, Compaction Conditions, Numerical Modelling, Real Case.