

The Comparison of the Reliability Margin Measure for the Different Concepts in the Slope Analysis

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Abstract : The general difference analysis between the former and new design concepts in geotechnical engineering is carried out. The application of new regulations results in the need for real adaptation of the computation principles of limit states, i.e. by providing a uniform way of analyzing engineering tasks. Generally, it is not possible to unambiguously match the limit state verification procedure with those in the construction engineering. The reasons are the inability to fully consistency of the common probabilistic basis of the analysis, and the fundamental effect of material properties on the value of actions and the influence of actions on resistance. Consequently, it is not possible to apply separate factorization with partial coefficients, as in construction engineering. For the slope stability analysis design procedures problems in the light of the use of limit states in relation to the concept of allowable stresses is detailed in. The quantifications of the safety margins in the slope stability analysis for both approaches is done. When analyzing the stability of the slope, by the strict application of the adopted forms from the new regulations for significant external temporary and/or seismic actions, the equivalent margin of safety is increased. The consequence is the emergence of more conservative solutions.

Keywords : allowable pressure, Eurocode 7, limit states, slope stability

Conference Title : ICCSGE 2018 : International Conference on Concrete, Structural and Geotechnical Engineering

Conference Location : Prague, Czechia

Conference Dates : March 22-23, 2018