

Project Title Geotechnical Parameters and Safety Factor Models of Alabaster Open Mine

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Abstract

This project is concerned with the laboratory evaluation of physical and mechanical characteristics of gypsum alabaster and anhydrite for the design of rock structures and the slope stability assessment of gypsum mines. To investigate the relevant mechanical properties of gypsum (alabaster) under these conditions, a series of laboratory tests including uniaxial compression and direct shear strength (DSS) was carried out. The soak time for gypsum in pipe water was as long as 7 and 14 days, and its DSS strength is reduced to different extents with increases in moisture content. The types of index tests performed in the laboratory were rebound hardness and point load tests. The mechanical properties of gypsum can be severely degraded by exposure to moisture content for long times, and consequently the modelling study has significance for evaluation of gypsum rock slope stability analysis.

Keyword: Direct shear test, Gypsum alabaster, Factor of safety, Point load strength, Moisture content