

Abstract

Unconfined compressive strength classifies as one of the key material parameters in engineering geology. Based on the strength of bedrock surface and transport structures (and more) are designed in a manner, so they will not collapse or be over-engineered, resulting in higher costs. This thesis compares suitability of the most common methods for determining unconfined compressive strength of rock, and further defines limiting factors and accuracy of its measurements. The research presents methods for determining unconfined compressive strength and suggest their suitable use in engineering geology. The most reliable method seems to be uniaxial compression test. Unlike other methods presented, it has real physical meaning, is not dependent on empirical correlation formulas and simplicity of calculation is also reflected on final accuracy. For fast strength determination in the field, the method of Schmidt hammer, the point-load test and the field test are sufficient. In case where it is not possible to obtain quality rock sample geophysical methods are sufficient.

Keywords: unconfined compression strength, engineering geology, field measurements, laboratory tests