

عنوان مقاله:

Application of Schmidt rebound number for estimating rock strength under specific geological conditions

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خلاصه مقاله:

A literature review revealed that most of the empirical equations introduced for determination of the uniaxial compressive strength (UCS) of rocks based on the Schmidt hammer rebound number (N) are not sufficiently reliable mostly due to the relatively low coefficient of correlations. This is attributed to the fact that in most cases one formula is used for all types of rocks, although the density of rocks is introduced to the formulae in some cases. On the other hand, if one specific relationship between N and UCS is introduced for one rock type, the equation will yield a much higher coefficient of correlation. During a research program supported by the Shahrood University of Technology, Iran, a third type of approach was considered. The study aimed to establish a relationship between N and UCS of a rock mass under particular geological circumstances. As an example, in this study, the immediate roof rock of coal seams in North-Eastern coal fields of Iran was selected. In order to determine the N and UCS, a significant number of samples were selected and tested, both in-situ and in the laboratory, and a new equation was established. The equation can be used to predict UCS of the roof rock in coal extracting areas in this zone by performing simple in-situ Schmidt hammer tests. It is predicted that such a procedure will be feasible for other geological conditions

کلمات کلیدی:

Coal field, Roof rock, Schmidt number, uniaxial compressive strength

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