

Description and classification of filled joint in granite — an approach

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The weathering degree of joint blocks and its infilling affects the deformational behaviour of filled joint. To appreciate its behaviour and level of criticality to an engineering construction, filled joint should be described and classified according to its weathering degree. This paper proposes the procedures for classifying filled joint in the field. Based on weathering classification of weathered rock, the suggested method is suitable for filled joint resulting from differential weathering of joints in granite.

A systematic field classification scheme is one of the most practical methods for obtaining initial data pertaining to geological materials and structures which are difficult to sample.

Like weathered rock masses, filled joints are formed by weathering process. Therefore, one feasible method to classify them in the field is through weathering classification of their major components namely, joint blocks and infilling. The weathering classification of rock material and rock mass can be used to classify filled joint into various weathering grades. The joint-block system undergoes at least four weathering stages before joint aperture could be filled with residual soils. When infill consists of layers of material, the most weathered layer controls the joint behaviour. Therefore, it is essential to acknowledge its presence irrespective of the weathering grade of the joint-block system.

The geological and mechanical characteristics of certain components of filled joint can be assessed in the field and laboratory. These include crushability, particle grading and weathering grade of the infill, and strength of the joint surfaces. If the assessed characteristics can be numerically graded according to their degree of significance in controlling joint behaviour, they may be used as basis for a comprehensive classification. A research is now being undertaken (RMC/UTM Vot 71319) to study this possibility.
