

Mendes and associates (1966) define a quality index based upon detailed microscopic analyses of mineral composition, mineral alteration, fracturing, and voids. They find a good correlation between this index and the modulus of elasticity. Iliev (1966) concludes that acoustic velocity varies significantly with the degree of weathering and that velocity differences between weathered and unweathered counterparts can be used to obtain a coefficient of weathering. This coefficient can in turn be useful in estimating other physical and mechanical properties of rocks that are known to be influenced by the degree of weathering.

Boretti-Onyszkiewicz (1966), Mauriño and Limousin (1966), and Paulmann (1966) use experimental deformation tests to detect latent planes of failure related to tectonically induced anisotropy. Utilization of the rock testing apparatus as a structural tool is an approach likely to see rapid growth. For example, Karp and Donath (1966) experimentally deformed prestrained specimens in an attempt to measure the magnitude of the prestrain and the directions and relative magnitudes of the principal stresses responsible for the initial deformation. Their results are encouraging and suggest that the method may be used in study of naturally prestrained specimens.

Several authors utilize the information obtained during drilling to evaluate the mechanical state of the rocks penetrated by the bit (Denissov et al., 1966; and Hansági, 1966). A core-fissuring factor is defined by Hansági and is used to establish a value of rock-firmness and a practical mining classification for the rock. Denissov and his co-workers use core recovery and drilling speed as parameters. They find that the former can give an incorrect idea about the state of the rock, whereas the latter, drilling rate, yields a certain correlation with the intensity of macrofracturing and the depth of weathering.