Classification, Engineering Properties and Field Exploration of Soils, Intact Rock and in Situ Rock Masses | William Joel Hall, Nathan Mortimore Newmark, A. J. Hendron | 1974 | U.S. Atomic Energy Commission, 1974

Rock Mass Classification is the process of placing a rock mass into groups or classes on defined relationships (Bieniawski, 1989), and assigning a unique description (or number) to it on the basis of similar properties/characteristics such that the behavior of the rock mass can be predicted. Rock mass is referred to an assemblage of rock material separated by rock discontinuities, mostly by joints, bedding planes, dyke intrusions and faults etc. Bedding planes, dyke intrusions and faults are not so common as compared to joints and are dealt individually (Bieniawski, 1993). Rock mass classifica... Rock mass is a matrix consisting of rock material and rock discontinuities. Its characterization and classification aim to determine the rock mass characteris...Â Its purpose was to derive the rock mass properties by using in-situ observations of the rock mass conditions along with correlations developed from the RMR-system. GSI utilizes 2 main parameters, the rock mass structure and the discontinuity surface quality. List of References. Barton N., Lien R. and Lunde J., (1974).Â Classification of rock masses for engineering: The RMR system and future trends, In: Hudson, J.A., ed., Comprehensive Rock Engineering, Volume 3: Oxford; New York, Pergamon Press, p. 553-573. Cook, N.G.W. et al. GEOTECHNICAL ENGINEERING CIRCULAR NO. 5 Evaluation of Soil and Rock Properties. 7. Author(s). P.J. Sabatini, R.C. Bachus, P.W. Mayne, J.A. Schneider, T.E. Zettler.Â An appendix of three detailed soil and rock property selection examples is provided which illustrate the application of the methods described in the document. 17. Key Words. Soil properties, rock properties, laboratory testing, in-situ testing, subsurface investigation, data quality, data interpretation, shear strength, consolidation, hydraulic conductivity, modulus. 18. Distribution Statement. No restrictions. Print Book & E-Book. ISBN 9780750604895, 9781483102276.Â The book covers topics such as the properties and classification of soils such as tills and other kinds of soils related to cold climates, tropical soils, and organic soils such as peat. The text also includes the engineering behavior and properties, classification and description, discontinuities, and weathering of rocks and rock masses. The monograph is recommended for engineers who would like to know about the properties of soils and rocks and the application of their study in the field of engineering. Table of Contents.Â References. 7 Engineering Behaviour of Rocks and Rock Masses 169. 7.1 Factors Controlling The Mechanical Behaviour of Rocks. 7.2 Deformation and Failure of Rocks. Geotechnical engineering deals with soil and rock, their characteristics and behavior and their effects on design and construction. It covers the broad spectrum of civil engineering including slopes, foundations, embankments and levees, retaining walls, soil nails, anchors, excavations and fills, and the list goes on. As geotechnical engineers our main objective is to understand the behavior of soil and rock, and provide appropriate advice to control and mitigate geotechnical risks associated with any project, large or small.Â In general terms, soil exploration by means of in situ techniques is less time consuming than investigations based on laboratory tests. â€¢