

The Isrm Suggested Methods For Rock Characterization Testing And Monitoring 2007 2014

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TBM Tunnelling in Jointed and Faulted Rock - Nick R. Barton
2000-01-01

This practical guide describes the stage-by-stage development of a method for predicting the penetration rate (PR) and the advance rate (AR) for tunnel boring machines based on an expanded version of the Q-value, QTBM. The author analyzes 145 TBM tunnels that total 1,000km in length. He then develops simple formulae to estimate PR and AR from the QTBM value and to back-calculate QTBM from performance data. The book quantitatively explains actual advance rates as high as five m/hr for one day or as low as 0.005 m/hr for several months. It also covers logging methods, empirical TBM tunnel support design, and numerical verification of support.

[Advances In Rock Mechanics](#) - Yunmei Lin 1998-10-07

Advances in Rock Mechanics is a publication presenting the state of the art in the field of rock mechanics. This book includes 29 contributions which present ongoing or recently completed research in various aspects of rock mechanics, as well as examples of current practice with advanced technologies or methods. On the whole, this book offers an interesting and comprehensive understanding of worldwide developments in rock

mechanics in recent years.

Experimental Rock Mechanics - Kiyoo Mogi 2006-11-03

Fracture and flow of rocks under stress and their geophysical and seismological implications raise fundamental questions in rock mechanics, particularly in the areas of tectonophysics and seismology. This text exclusively addresses the deformation and fracture of rock specimens under general triaxial compression, in which all three principal stress

Rock Mechanics - Barry H.G. Brady 2007-01-25

This new edition has been completely revised to reflect the notable innovations in mining engineering and the remarkable developments in the science of rock mechanics and the practice of rock engineering that have taken place over the last two decades. Although "Rock Mechanics for Underground Mining" addresses many of the rock mechanics issues that arise in underground mining engineering, it is not a text exclusively for mining applications. Based on extensive professional research and teaching experience, this book will provide an authoritative and comprehensive text for final year undergraduates and commencing postgraduate students. For professional practitioners, not only will it be of

interests to mining and geological engineers, but also to civil engineers, structural mining geologists and geophysicists as a standard work for professional reference purposes.

Physical and Mechanical Properties of Rocks - Institut geologii rudnykh mestorozhdenii, petrografii, mineralogii i geokhimii (Akademii nauk SSSR) 1967

Rock Mechanics and Engineering Volume 1 - Xia-Ting Feng
2017-03-16

Principles is the first volume of the five-volume set Rock Mechanics and Engineering and contains twenty-four chapters from key experts in the following fields: - Discontinuities; - Anisotropy; - Rock Stress; - Geophysics; - Strength Criteria; - Modeling Rock Deformation and Failure. The five-volume set "Comprehensive Rock Engineering", which was published in 1993, has had an important influence on the development of rock mechanics and rock engineering. Significant and extensive advances and achievements in these fields over the last 20 years now justify the publishing of a comparable, new compilation. Rock Mechanics and Engineering represents a highly prestigious, multi-volume work edited by Professor Xia-Ting Feng, with the editorial advice of Professor John A. Hudson. This new compilation offers an extremely wideranging and comprehensive overview of the state-of-the-art in rock mechanics and rock engineering and is composed of peer-reviewed, dedicated contributions by all the key experts worldwide. Key features of this set are that it provides a systematic, global summary of new developments in rock mechanics and rock engineering practices as well as looking ahead to future developments in the fields. Contributors are worldrenowned experts in the fields of rock mechanics and rock engineering, though younger, talented researchers have also been included. The individual volumes cover an extremely wide array of topics grouped under five overarching themes: Principles (Vol. 1), Laboratory and Field Testing (Vol. 2), Analysis, Modelling and Design (Vol. 3), Excavation, Support and Monitoring (Vol. 4) and Surface and Underground Projects (Vol. 5). This multi-volume work sets a new

standard for rock mechanics and engineering compendia and will be the go-to resource for all engineering professionals and academics involved in rock mechanics and engineering for years to come.

Engineering Geology for Underground Rocks - Suping Peng
2007-10-14

Professionals and students in any geology-related field will find this an essential reference. It clearly and systematically explains underground engineering geology principles, methods, theories and case studies. The authors lay out engineering problems in underground rock engineering and how to study and solve them. The book specially emphasizes mechanical and hydraulic couplings in rock engineering for wellbore stability, mining near aquifers and other underground structures where inflow is a problem.

Rock Indentation - Chivukula S.N. Murthy 2021-08-30

This book focusses on rock indentation and importance of specific drilling/cutting energy as a performance indicator for drilling/rock cutting. It aids in designing of drill bit and cutting pick, through performance evaluation for a given geometry. It further covers stress distribution along three axes in rock during load application, correlation of specific energy with properties of rocks and statistical modeling to generate mathematical equation to estimate the specific energy indentation, including performance prediction by artificial neural network modeling. Presented models can be used to assess the specific energy in rock indentation from the physic-mechanical properties of rocks. Presents synthesis of rock indentation experiments and analyses. Deals with statistical modeling to generate mathematical equations to estimate the specific energy indentation from the rock parameters/properties. Discusses how to find the performance of drill and cutting bits during drilling or cutting operations through indentation test. Covers numerical modeling to explain stress distribution in rock during rock indentation. Includes artificial neural network concepts used in field of rock mechanics. This book is aimed at researchers and graduate students in mining/geological engineering, mechanical engineering.

The Complete ISRM Suggested Methods for Rock Characterization, Testing and Monitoring - Reşat Ulusay 2007

Engineering Rock Mass Classification - R K Goel 2011-08-09

Rock mass classification methods are commonly used at the preliminary design stages of a construction project when there is very little information. It forms the bases for design and estimation of the required amount and type of rock support and groundwater control measures. Encompassing nearly all aspects of rock mass classifications in detail, *Civil Engineering Rock Mass Classification: Tunnelling, Foundations and Landsides* provides construction engineers and managers with extensive practical knowledge which is time-tested in the projects in Himalaya and other parts of the world in complex geological conditions. Rock mass classification is an essential element of feasibility studies for any near surface construction project prior to any excavation or disturbances made to earth. Written by an author team with over 50 years of experience in some of the most difficult mining regions of the world, *Civil Engineering Rock Mass Classification: Tunnelling, Foundations and Landsides* provides construction engineers, construction managers and mining engineers with the tools and methods to gather geotechnical data, either from rock cuts, drifts or core, and process the information for subsequent analysis. The goal is to use effective mapping techniques to obtain data can be used as input for any of the established rock classification systems. The book covers all of the commonly used classification methods including: Barton's Q and Q' systems, Bieniawski's RMR, Laubscher's MRMR and Hoek's and GSI systems. With this book in hand, engineers will be able to gather geotechnical data, either from rock cuts, drifts or core, and process the information for subsequent analysis. Rich with international case studies and worked out equations, the focus of the book is on the practical gathering information for purposes of analysis and design. Identify the most significant parameters influencing the behaviour of a rock mass Divide a particular rock mass formulation into groups of similar behaviour, rock mass classes of varying quality Provide a basis of understanding the characteristics of

each rock mass class Relate the experience of rock conditions at one site to the conditions and experience encountered at others Derive quantitative data and guidelines for engineering design Provide common basis for communication between engineers and geologists

Rock Mechanics - Barry H.G. Brady 2013-06-29

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Rock Mechanics and Engineering Volume 5 - Xia-Ting Feng 2017-07-20

Surface and Underground Projects is the last volume of the five-volume set *Rock Mechanics and Engineering* and contains twenty-one chapters from key experts in the following fields: - Slopes; - Tunnels and Caverns; - Mining; - Petroleum Engineering; - Thermo-/Hydro-Mechanics in Gas Storage, Loading and Radioactive Waste Disposal. The five-volume set "Comprehensive Rock Engineering", which was published in 1993, has had an important influence on the development of rock mechanics and rock engineering. Significant and extensive advances and achievements in these fields over the last 20 years now justify the publishing of a comparable, new compilation. *Rock Mechanics and Engineering* represents a highly prestigious, multi-volume work edited by Professor Xia-Ting Feng, with the editorial advice of Professor John A. Hudson. This new compilation offers an extremely wide-ranging and comprehensive overview of the state-of-the-art in rock mechanics and

rock engineering and is composed of peer-reviewed, dedicated contributions by all the key experts worldwide. Key features of this set are that it provides a systematic, global summary of new developments in rock mechanics and rock engineering practices as well as looking ahead to future developments in the fields. Contributors are worldrenowned experts in the fields of rock mechanics and rock engineering, though younger, talented researchers have also been included. The individual volumes cover an extremely wide array of topics grouped under five overarching themes: Principles (Vol. 1), Laboratory and Field Testing (Vol. 2), Analysis, Modelling and Design (Vol. 3), Excavation, Support and Monitoring (Vol. 4) and Surface and Underground Projects (Vol. 5). This multi-volume work sets a new standard for rock mechanics and engineering compendia and will be the go-to resource for all engineering professionals and academics involved in rock mechanics and engineering for years to come.

Effect of End Conditions on Determining Compressive Strength of Rock Samples - John R. Hoskins 1968

Evaluation of Soil and Rock Properties - P. J. Sabatini 2004-10-01

This document presents state-of-the-practice information on the evaluation of soil and rock properties for geotechnical design applications. This document addresses the entire range of materials potentially encountered in highway engineering practice, from soft clay to intact rock and variations of materials that fall between these two extremes. Information is presented on parameters measured, evaluation of data quality, and interpretation of properties for conventional soil and rock laboratory testing, as well as in situ devices such as field vane testing, cone penetration testing, dilatometer, pressuremeter, and borehole jack. This document provides the design engineer with information that can be used to develop a rationale for accepting or rejecting data and for resolving inconsistencies between data provided by different laboratories and field tests. This document also includes information on: (1) the use of Geographical Information Systems (GIS) and Personal Data Assistance devices for the collection and

interpretation of subsurface information; (2) quantitative measures for evaluating disturbance of laboratory soil samples; and (3) the use of measurements from geophysical testing techniques to obtain information on the modulus of soil. Also included are chapters on evaluating properties of special soil materials (e.g., loess, cemented sands, peats and organic soils, etc.) and the use of statistical information in evaluating anomalous data and obtaining design values for soil and rock properties. An appendix of three detailed soil and rock property selection examples is provided which illustrate the application of the methods described in the document.

The Geotechnics of Hard Soils - Soft Rocks - Aldo Evangelista 1998

Rock Dynamics: From Research to Engineering - Haibo Li 2016-04-19

Rock Dynamics: From Research to Engineering is a collection of the scientific and technical papers presented at the Second International Conference on Rock Dynamics and Applications (RocDyn-2, Suzhou, China, 18-19 May 2016). The book has four sections. The first section contains 8 keynote papers, covering a wide range of dynamic issues related to roc

Rock Characterization - John A. Hudson 1992

Geotechnical and Geophysical Site Characterisation 5 - Barry M.

Lehane 2016-12-23

Proceedings of the Fifth International Conference on Geotechnical and Geophysical Site Characterisation (ISC?5) held from September 5th to 9th 2016, Gold Coast, Australia

Laboratory Rock Mechanics Testing Manual - Frank S. Shuri 1981

Engineering Rock Mechanics - John A Hudson 2000-06-12

Engineering rock mechanics is the discipline used to design structures built in rock. These structures encompass building foundations, dams, slopes, shafts, tunnels, caverns, hydroelectric schemes, mines, radioactive waste repositories and geothermal energy projects: in short, any structure built on or in a rock mass. Despite the variety of projects

that use rock engineering, the principles remain the same. Engineering Rock Mechanics clearly and systematically explains the key principles behind rock engineering. The book covers the basic rock mechanics principles; how to study the interactions between these principles and a discussion on the fundamentals of excavation and support and the application of these in the design of surface and underground structures. Engineering Rock Mechanics is recommended as an across-the-board source of information for the benefit of anyone involved in rock mechanics and rock engineering.

Handbook of Geotechnical Testing: Basic Theory, Procedures and Comparison of Standards - Yanrong Li 2019-12-20

Determination of the physical, chemical and mechanical properties of ground materials is the key to successfully deliver such projects as slope stabilization, excavation and lateral support, foundation etc. A book containing both theory of geomaterial testing and up-to-date testing methods is much in demand for obtaining reliable and accurate test results. This book is intended primarily to serve this need and aims at the clear explanation, in adequate depth, of the fundamental principles, requirements and procedures of soil and rock tests. It is intended that the book will serve as a useful source of reference for professionals in the field of geotechnical and geological engineering. It can work as a one-stop knowledge warehouse to build a basic cognition of material tests on which the readers are working. It helps college students bridge the gap between class education and engineering practice, and helps academic researchers guarantee reliable and accurate test results. It is also useful for training new technicians and providing a refresher for veterans. Engineers contemplating the ICE, IOM3 and other certification exams will find this book an essential test preparation aid. It is assumed that the reader has no prior knowledge of the subject but has a good understanding of basic mechanics.

Underground Excavations in Rock - E.T. Brown 1980-06-30

Underground Excavations in Rock deals with the geotechnical aspects of the design of underground openings for mining and civil engineering processes.

Rock Engineering Design - Xia-Ting Feng 2011-07-27

Given the recent advances in site investigation techniques, computing, access to information and monitoring, plus the current emphasis on safety, accountability and sustainability, this book introduces an up-to-date methodology for the design of all types of rock engineering projects, whether surface or underground. Guidance is provided on the nature of the modeling to support design and the information required for design; also included is a procedure for technical auditing of the modeling and design together with the related protocol sheets. Written by two eminent authors, clearly structured and containing many illustrations, this volume is intended for consulting engineers, contractors, researchers, lecturers and students working on rock engineering projects.

Rock Mechanics and Rock Engineering: From the Past to the Future - Reşat Ulusay 2016-11-18

Rock Mechanics and Rock Engineering: From the Past to the Future contains the contributions presented at EUROCK2016, the 2016 International Symposium of the International Society for Rock Mechanics (ISRM 2016, Ürgüp, Cappadocia Region, Turkey, 29-31 August 2016). The contributions cover almost all aspects of rock mechanics and rock engineering from theories to engineering practices, emphasizing the future direction of rock engineering technologies. The 204 accepted papers and eight keynote papers, are grouped into several main sections: - Fundamental rock mechanics - Rock properties and experimental rock mechanics - Analytical and numerical methods in rock engineering - Stability of slopes in civil and mining engineering - Design methodologies and analysis - Rock dynamics, rock mechanics and rock engineering at historical sites and monuments - Underground excavations in civil and mining engineering - Coupled processes in rock mass for underground storage and waste disposal - Rock mass characterization - Petroleum geomechanics - Carbon dioxide sequestration - Instrumentation-monitoring in rock engineering and back analysis - Risk management, and - the 2016 Rocha Medal Lecture and the 2016 Franklin Lecture Rock Mechanics and Rock Engineering: From the Past to the Future will be of interest to researchers and professionals involved in the various

branches of rock mechanics and rock engineering. EUROCK 2016, organized by the Turkish National Society for Rock Mechanics, is a continuation of the successful series of ISRM symposia in Europe, which began in 1992 in Chester, UK.

Scale Effects in Rock Masses 93 - A. Pinto da Cunha 2020-09-10

The proceedings of the 2nd International Scale Effects in Rock Masses, held in Lisbon, June 25, 1993. The text includes coverage of scale effects in the determination of the deformability and strength of rock masses and scale effects in the determination of internal rock masses.

The ISRM Suggested Methods for Rock Characterization, Testing and Monitoring: 2007-2014 - R. Ulusay 2014-07-25

This book is a collection of ISRM suggested methods for testing or measuring properties of rocks and rock masses both in the laboratory and in situ, as well as for monitoring the performance of rock engineering structures. The first collection (Yellow Book) has been published in 1981. In order to provide access to all the Suggested Methods in one volume, the ISRM Blue Book was published in 2007 (by the ISRM via the Turkish National Group) and contains the complete set of Suggested Methods from 1974 to 2006 inclusive. The papers in this most recent volume have been published during the last seven years in international journals, mainly in Rock Mechanics and Rock Engineering. They offer guidance for rock characterization procedures and laboratory and field testing and monitoring in rock engineering. These methods provide a definitive procedure for the identification, measurement and evaluation of one or more qualities, characteristics or properties of rocks or rock systems that produces a test result.

True Triaxial Testing of Rocks - Marek Kwasniewski 2012-08-06

This is the first book ever published on the problems of true triaxial testing of rocks addressing all aspects of true triaxial testing of rocks, including: (i) true triaxial testing techniques and procedures; (ii) test results: strength, deformability, failure mode, permeability, acoustic emission, and elastic wave velocity; (iii) constitutive

Rock Engineering - Arild Palmström 2015

Encyclopedia of Engineering Geology - Peter Bobrowsky 2018-08-14

This volume addresses the multi-disciplinary topic of engineering geology and the environment, one of the fastest growing, most relevant and applied fields of research and study within the geosciences. It covers the fundamentals of geology and engineering where the two fields overlap and, in addition, highlights specialized topics that address principles, concepts and paradigms of the discipline, including operational terms, materials, tools, techniques and methods as well as processes, procedures and implications. A number of well known and respected international experts contributed to this authoritative volume, thereby ensuring proper geographic representation, professional credibility and reliability. This superb volume provides a dependable and ready source of information on approximately 300 topical entries relevant to all aspects of engineering geology. Extensive illustrations, figures, images, tables and detailed bibliographic citations ensure that the comprehensively defined contributions are broadly and clearly explained. The Encyclopedia of Engineering Geology provides a ready source of reference for several fields of study and practice including civil engineers, geologists, physical geographers, architects, hazards specialists, hydrologists, geotechnicians, geophysicists, geomorphologists, planners, resource explorers, and many others. As a key library reference, this book is an essential technical source for undergraduate and graduate students in their research.

Teachers/professors can rely on it as the final authority and the first source of reference on engineering geology related studies as it provides an exceptional resource to train and educate the next generation of practitioners.

Geomechanics and Geodynamics of Rock Masses, Volume 1 - Vladimir Litvinenko 2018-05-20

This book is Volume 1 of the EUROCK 2018 proceedings. Geomechanics and Geodynamics of Rock Masses contains contributions presented at EUROCK 2018, the 2018 International Symposium of the International Society for Rock Mechanics (ISRM 2018, Saint Petersburg, Russia, 22-26 May 2018). Dedicated to recent advances and achievements in the fields

of geomechanics and geotechnology, the main topics of the book include:
- Physical and mechanical properties of fractured rock (laboratory testing and rock properties, field measurements and site investigations) -
Geophysics in rock mechanics - Rock mass strength and failure -
Nonlinear problems in rock mechanics - Effect of joint water on the behavior of rock foundation - Numerical modeling and back analysis -
Mineral resources development: methods and rock mechanics problems -
Rock mechanics and underground construction in mining, hydropower industry and civil engineering - Rock mechanics in petroleum engineering -
Geodynamics and monitoring of rock mass behavior - Risks and hazards -
Geomechanics of technogenic deposits Geomechanics and Geodynamics of Rock Masses will be of interest to researchers and professionals involved in the various branches of rock mechanics and rock engineering. EUROCK 2018, organized by the Saint Petersburg Mining University, is a continuation of the successful series of ISRM symposia in Europe, which began in 1992 in Chester, UK.

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Rock Slope Engineering - Duncan C. Wyllie 2017-09-18

Rock Slope Engineering covers the investigation, design, excavation and remediation of man-made rock cuts and natural slopes, primarily for civil engineering applications. It presents design information on structural geology, shear strength of rock and ground water, including weathered rock. Slope design methods are discussed for planar, wedge, circular and toppling failures, including seismic design and numerical analysis. Information is also provided on blasting, slope stabilization, movement monitoring and civil engineering applications. This fifth edition has been extensively up-dated, with new chapters on weathered rock, including shear strength in relation to weathering grades, and seismic design of rock slopes for pseudo-static stability and Newmark displacement. It now includes the use of remote sensing techniques such as LiDAR to monitor slope movement and collect structural geology data. The chapter on numerical analysis has been revised with emphasis on civil applications. The book is written for practitioners working in the fields of transportation, energy and industrial development, and undergraduate and graduate level courses in geological engineering.

Rock Characterization, Testing & Monitoring - Edwin T. Brown 1981

Engineering Rock Mass Classifications - Z. T. Bieniawski 1989-08-24

This is the first authoritative reference on rock mass classification, consolidating into one handy source information once widely scattered throughout the literature. It includes new, previously unpublished material and case histories, presents the fundamental concepts of classification schemes, and critically appraises their practical application in industrial projects such as tunneling and mining.

Advances on Testing and Experimentation in Civil Engineering -

Carlos Chastre 2022-09-18

The book presents the recent advances on testing and experimentation in civil engineering, especially in the branches of geotechnics, transportation, hydraulics, and natural resources. It includes advances in physical modelling, monitoring techniques, data acquisition and analysis, and provides an invaluable contribution for the installation of new civil engineering experimental facilities. The first part of the book covers the

latest advances in testing and experimentation in key domains of geotechnics: soil mechanics and geotechnical engineering, rock mechanics and rock engineering, and engineering geology. Some of the topics covered include new developments in topographic survey acquisition for applied mapping and in situ geotechnical investigations; laboratory and in situ tests to estimate the relevant parameters needed to model the behaviour of rock masses and land structures; monitoring and inspection techniques designed for offshore wind foundations. The second part of the book highlights the relevance of testing and monitoring in transportation. Full-scale accelerated pavement testing, and instrumentation becomes even more important nowadays when, for sustainability purposes, non-traditional materials are used in road and airfield pavements. Innovation in testing and monitoring pavements and railway tracks is also developed in this part of the book. Intelligent traffic systems are the new traffic management paradigm, and an overview of new solutions is addressed here. Finally, in the third part of the book, trends in the field and laboratory measurements and corresponding data analysis are presented according to the different hydraulic domains addressed in this publication, namely maritime hydraulics, surface water and river hydraulics and urban water.

Engineering Properties of Rocks - Lianyang Zhang 2016-09-06

More often than not, it is difficult or even impossible to obtain directly the specific rock parameters of interest using in situ methods. The procedures for measuring most rock properties are also time consuming and expensive. *Engineering Properties of Rocks, Second Edition*, explores the use of typical values and/or empirical correlations of similar rocks to determine the specific parameters needed. The book is based on the author's extensive experience and offers a single source of information for the evaluation of rock properties. It systematically describes the classification and characterization of intact rock, rock discontinuities, and rock masses, and presents the various indirect methods for estimating the deformability, strength, and permeability of these components as well as the in situ rock stresses. Presents a single source for the correlations on rock properties Saves time and resources

invested on in situ testing procedures Fully updated with current literature Expanded coverage of rock types and geographical locations
Mont Terri Rock Laboratory, 20 Years - Paul Bossart 2017-12-20
The international Mont Terri rock laboratory in Switzerland plays a central role in the safety and construction of deep geological nuclear repositories in clay formations. The laboratory has developed and refined a range of new measurement and evaluation methods: it has e.g. advanced the determination of rock parameters using innovative borehole geophysics, improved the methodology for characterizing pore-water and microbial activity in claystones, and greatly improved our understanding of diffusion and retention processes of radionuclides in and through claystones. The methods and insights described in this compendium can also be applied to low-permeability rocks at various sites around the globe, and in other fields of application.

Rock Mechanics and Rock Engineering - Ömer Aydan 2022-07-30

Rock Mechanics and Rock Engineering is concerned with the application of the principles of mechanics to physical, chemical and electro-magnetic processes in the upper-most layers of the earth and the design and construction of the rock structures associated with civil engineering and exploitation or extraction of natural resources in mining and petroleum engineering. Rock mechanics requires profound knowledge of rock-constituting elements, discontinuities and their behavior under various physical and chemical actions in nature. The governing equations together with constitutive laws and experimental techniques and the solution techniques are explained and some examples of applications are given. The applications of rock mechanics to engineering structures in/on rock, rock excavation techniques and in-situ monitoring techniques are explained and some specific examples are given. The dynamic aspects associated with the science of earthquakes and their effect on rock structures, and the characteristics of vibrations induced by machinery, blasting and impacts as well as measuring techniques are described. Furthermore, the degradation and maintenance processes in rock engineering are explained. Some chapters are devoted to possible new directions in rock mechanics. This two-volume set is intended to be a

fundamental resource for younger generations and newcomers and a reference work for experts specialized in Rock Mechanics and Rock Engineering and associated with the fields of mining, civil and petroleum engineering, engineering geology, and/or specialized in Geophysics and concerned with earthquake science and engineering.

Soft Rock Mechanics and Engineering - Milton Kanji 2019-11-24

This book offers a practical reference guide to soft rock mechanics for engineers and scientists. Written by recognized experts, it will benefit professionals, contractors, academics, researchers and students working on rock engineering projects in the fields of civil engineering, mining and construction engineering. Soft Rock Mechanics and Engineering covers a specific subject of great relevance in Rock Mechanics – and one that is directly connected to the design of geotechnical structures under difficult ground conditions. The book addresses practical issues related to the geomechanical properties of these types of rock masses and their characterization, while also discussing advances regarding in situ investigation, safety, and monitoring of geotechnical structures in soft rocks. Lastly, it presents important case histories involving tunnelling, dam foundations, coal and open pit mines and landslides.

Rock Mechanics and Engineering Volume 2 - Xia-Ting Feng
2017-07-12

Laboratory and Field Testing is the second volume of the five-volume set Rock Mechanics and Engineering and contains nineteen chapters from key experts in the following fields: - Triaxial or True-triaxial Tests under Condition of Loading and Unloading; - Joint Tests; - Dynamic and Creep

Tests; - Physical Modeling Tests; - Field Testing and URLs. The five-volume set “Comprehensive Rock Engineering”, which was published in 1993, has had an important influence on the development of rock mechanics and rock engineering. Significant and extensive advances and achievements in these fields over the last 20 years now justify the publishing of a comparable, new compilation. Rock Mechanics and Engineering represents a highly prestigious, multi-volume work edited by Professor Xia-Ting Feng, with the editorial advice of Professor John A. Hudson. This new compilation offers an extremely wideranging and comprehensive overview of the state-of-the-art in rock mechanics and rock engineering and is composed of peer-reviewed, dedicated contributions by all the key experts worldwide. Key features of this set are that it provides a systematic, global summary of new developments in rock mechanics and rock engineering practices as well as looking ahead to future developments in the fields. Contributors are worldrenowned experts in the fields of rock mechanics and rock engineering, though younger, talented researchers have also been included. The individual volumes cover an extremely wide array of topics grouped under five overarching themes: Principles (Vol. 1), Laboratory and Field Testing (Vol. 2), Analysis, Modelling and Design (Vol. 3), Excavation, Support and Monitoring (Vol. 4) and Surface and Underground Projects (Vol. 5). This multi-volume work sets a new standard for rock mechanics and engineering compendia and will be the go-to resource for all engineering professionals and academics involved in rock mechanics and engineering for years to come.