Explosives Engineering Construction Vibrations And Geotechnology

Construction Planning, Equipment, and Methods

Ground Vibration Engineering

Construction Planning, Equipment, and Methods

Ground Vibration Engineering Ground vibration consideration is gaining significance with people's decreasing tolerance of vibration, introduction of new environmental legislations, increasing use of equipment sensitive to vibration, ageing of existing buildings and expanding construction sites to near collapsible/liquefiable/thixotropic soil. This volume bridges the gap that exists between rather limited provisions of engineering codes/standards and complex numerical analyses/small-scale tests. The book contains descriptions of ground vibration measurements, predictions and control for engineers. Effects of most frequent sources of ground vibration arising from construction/demolition, traffic and machinery, ground wave amplification and attenuation as well as foundation kinematic and inertial interaction have been considered by simplified analyses aimed at ease and speed of use for major problems in ground vibration engineering. Comments on assumptions, limitations, and factors affecting the results are given. Case studies and examples worldwide are included to illustrate the accuracy and usefulness of simplified methods. A list of references is provided for further consideration, if desired.

Audience: This work is of interest to geotechnical engineers, engineering geologists, earthquake engineers and students. Extra material: Microsoft Excel spreadsheets with the input data and results for the case studies and examples considered in this book are available at http://extras.springer.com

Construction Planning, Equipment, and Methods

Construction Vibrations

The Explosives Engineer 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 updated, 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.

Tech Engineering News This book summarizes the technical advances in recent decades and the various theories on rock excavation raised by scholars from different countries, including China and Russia. It not only focuses on rock blasting but also illustrates a number of non-blasting methods, such as mechanical excavation in detail. The book consists of 3 parts: Basic Knowledge, Surface Excavation and Underground Excavation. It presents a variety of technical methods and data from diverse sources in the book, making it a valuable theoretical and practical reference resource for engineers, researchers and postgraduates alike.

Instrumentation for Ground Vibration and Earthquakes

Western Construction Includes scientific articles and papers, p. 55-606.

Sci-tech News

Applied Explosives Technology for Construction and Mining

Introduction to the Technology of Explosives Rock Fracture and Blasting: Theory and Applications provides the latest on stress waves, shock waves, and rock fracture, all necessary components that must be critically analyzed to maximize results in rock blasting. The positioning of charges and their capacity and sequencing are covered in this book, and must be carefully modeled to minimize impact in the surrounding environment. Through an explanation of these topics, author Professor Zhang's experience in the field, and his theoretical knowledge, users will find a thorough guide that is not only up-to-date, but complete with a unique perspective on the field. Includes a rigorous exposition of Stress Waves and Shock Waves, as well as Rock Fracture and Fragmentation Provides both empirical and Hybrid Stress Blasting Modeling tools and techniques for designing effective blast plans Offers advanced knowledge that enables users to choose better blast techniques Includes exercises for learning and training in each chapter


The Explosive Engineer

Explosives Engineering, Construction Vibrations and Geotechnology

Earthmoving and Excavating Plant
Professional Safety This text describes topics discussed at the conference, including: tunneling and construction in soft ground and rocks; geological investigations; tunneling machines; planning for underground infrastructure; safety issues and environmental and social aspects of underground development.

Illinois Technograph This Bureau of Mines report covers the latest technology in explosives and blasting procedures. It includes information and procedures developed by Bureau research, explosives manufacturers, and the mining industry. It is intended for use as a guide in developing training programs and also to provide experienced blasters an update on the latest state of technology in the broad field of explosives and blasting. Types of explosives and blasting agents and their key explosive and physical properties are discussed. Explosives selection criteria are described. The features of the traditional initiation systems - electrical, detonating cord, and cap and fuse - are pointed out, and the newer nonelectric initiation systems are discussed. Various blasthole priming techniques are described. Blasthole loading of various explosive types is covered. Blast design, including geologic considerations, for both surface and underground blasting is detailed. Environmental effects of blasting such as flyrock and air and ground vibrations are discussed along with techniques of measuring and alleviating these undesirable side effects. Blasting safety procedures are detailed in the chronological order of the blasting process. The various Federal blasting regulations are enumerated along with their Code of Federal Regulations citations. An extensive glossary of blasting related terms is included along with references to articles providing more detailed information on the aforementioned items. Emphasis in the report has been placed on practical considerations.

Rock Fragmentation by Blasting Rock Fragmentation by Blasting contains the papers presented at the 10th International Symposium on Rock Fragmentation by Blasting (New Delhi, India, 26-29 November 2012), and represents the most advanced forum on blasting science and technology. The contributions cover all major recent advancements in blasting and fragmentation, from realistic tre

Roads and Streets Introduction to the Technology of Explosives Paul W. Cooper and Stanley R. Kuroski Introduction to the Technology of Explosives is a clear and concise survey of the technologies and physical processes involved in explosive phenomena. The book is intended to provide the worker new to the field with sufficient background to understand problems that may arise and to interact intelligently with specialists in the field. The book covers the fundamentals of the chemistry of explosives; the mechanics of burning; sound, shock, and detonation; initiation and initiators; scaling in design and analysis; and off-the-shelf explosive devices. It provides the basic calculation skills needed to solve simple, first-order engineering design problems, and emphasizes the crucial importance of safety considerations. The book contains a broad range of data on explosive materials, and their properties and behavior, along with extensive lists of useful references. Example problems with solutions are provided in each technical area, as are descriptions and analysis of a wide variety of explosive devices. The book concludes with a thorough and comprehensive description of regulatory requirements for the classification, transportation, and storage of explosives, and an extensive guide to explosives safety in plant and test facilities. This book will be of interest to explosives technicians and engineers, government regulators, crime and accident scene investigators, and instructors in military, police, and FBI bomb schools.

Blind Vibration Monitoring and Control

Explosives and Blasting Procedures Manual

Directory of Construction Industry Consultants This third edition of the SME Mining Engineering Handbook reaffirms its international reputation as "the handbook of choice" for today's practicing mining engineer. It distills the body of knowledge that characterizes mining engineering as a disciplinary field and has subsequently helped to inspire and inform generations of mining professionals. Virtually all of the information is original content, representing the latest information from more than 250 internationally recognized mining industry experts. Within the handbook's 115 thought-provoking chapters are current topics relevant to today's mining professional: Analyzing how the mining and minerals industry will develop over the medium and long term--why such changes are inevitable, what this will mean in terms of challenges, and how they could be managed Explaining the mechanics associated with the multifaceted world of mine and mineral economics, from the decisions associated with how best to finance a single piece of high-value equipment to the long-term cash-flow issues associated with mine planning at a mature operation Describing the recent and ongoing technical initiatives and engineering developments in relation to robotics, automation, acid rock drainage, block caving optimization, or process dewatering methods Examining in detail the methods and equipment available to achieve efficient, predictable, and safe rock breaking, whether employing a tunnel boring machine for development work, mineral extraction using a mobile miner, or cast blasting at a surface coal operation Identifying the salient points that dictate which is the safest, most efficient, and most versatile extraction method to employ, as well as describing in detail how each alternative is engineered Discussing the impacts that social and environmental issues have on mining from the pre-exploration phase to end-of-mine issues and beyond, and how to manage these two increasingly important factors to the benefit of both the mining companies and other stakeholders

Journal of the Construction Division

Civil Engineering Practice

Proceedings

Issues for include section: Bituminous roads and streets.

Civil Engineering Practice: Surveying

Rock Fracture and Blasting

Rock Slope Engineering The Seventh Edition of Construction Planning, Equipment, and Methods, follows in the footsteps of the previous editions by providing the reader with the fundamentals of machine utilization and production estimating in a logical, simple, and concise format. Our text features expanded coverage of building in today's global environment. Hundreds of photos and illustrations have been added to the seventh edition to make this dynamic text even more accessible to both students and professionals. In addition, since technology is constantly evolving, this text provides an understanding of machine capabilities and how to properly apply those capabilities to construction challenges. The media package includes: Web-based exercises have been added to many chapters to draw attention to the expanding volume of information available over the Internet. The computer monitor icon in the text margin will direct you to the text website (http://www.mhhe.com/engcs/civil/peurifoy). In addition, extensive web resources are provided at the end of every text chapter.

Effect of Vibration on Concrete Strength During Foundation Construction

Forensic Engineering

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Engineering Aspects of Property Damage Prevention in Open-cut Construction

Peaceful Applications of Nuclear Explosives -- Plowshare

SME Mining Engineering Handbook, Third Edition

The Mining Engineer

Rock Blasting and Explosives Engineering Rock Blasting and Explosives Engineering covers the practical engineering aspects of many different kinds of rock blasting. It includes a thorough analysis of the cost of the entire process of tunneling by drilling and blasting in comparison with full-face boring. Also covered are the fundamental sciences of rock mass and material strength, the thermal decomposition, burning, shock initiation, and detonation behavior of commercial and military explosives, and systems for charging explosives into drillholes. Functional descriptions of all current detonators and initiation systems are provided. The book includes chapters on flyrock, toxic fumes, the safety of explosives, and even explosives applied in metal working as a fine art. Fundamental in its approach, the text is based on the practical industrial experience of its authors. It is supported by an abundance of tables, diagrams, and figures. This combined textbook and handbook provides students, practitioners, and researchers in mining, mechanical, building construction, geological, and petroleum engineering with a source from which to gain a thorough understanding of the constructive use of explosives.

Skillings' Mining Review

CIM ICM Bulletin Technical Papers

Theory and Technology of Rock Excavation for Civil Engineering

Rock Blasting and Overbreak Control

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