. Record Nr.	UNINA9910789449603321
Titolo	Comprehensive rock engineering : principles, practice & projects / / editor-in-chief, John A. Hudson
Pubbl/distr/stampa	Oxford, England : , : Pergamon Press Ltd, , 1993 ©1993
ISBN	1-4832-8781-5
Edizione	[First edition.]
Descrizione fisica	1 online resource (866 p.)
Collana	Excavation, Support and Monitoring ; ; Volume 4
Disciplina	624.1/5132
Soggetti	Rock mechanics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	Front Cover; Excavation, Support and Monitoring; Copyright Page; Table of Contents; Preface; Contributors to Volume 4; Contents of All Volumes; Chapter 1. The Construction Process; 1.1 INTRODUCTION; 1.2 EXCAVATION; 1.3 SUPPORT; 1.4 MONITORING; 1.5 CONCLUSIONS; 1.6 REFERENCES; Chapter 2. Mechanisms of Rock Fragmentation by Blasting; 2.1 INTRODUCTION; 2.2 HISTORY OF THE CONTROVERSY; 2.3 STRESS WAVE MECHANISMS; 2.4 GAS PRESSURIZATION MECHANISMS; 2.5 CRATER BLASTING; 2.6 CONTROLLED FRACTURING; 2.7 APPLICATIONS IN CONSTRUCTION AND QUARRY BLASTING; 2.8 SUMMARY; 2.9 REFERENCES Chapter 3. Methods of Improving Blasting Operations3.1 INTRODUCTION; 3.2 FRAGMENTATION; 3.3 DAMAGE; 3.4 ENVIRONMENTAL ASPECTS; 3.5 REFERENCES; Chapter 4. Blast Monitoring: Regulations, Methods and Control Techniques; 4.1 INTRODUCTION; 4.2 BLAST VIBRATION -GENERAL; 4.3 METHODS; 4.4 REGULATIONS; 4.5 CONTROL; 4.6 PRODUCTIVITY; 4.7 CONCLUSIONS; 4.8 APPENDIX -RESPONSE SPECTRUM CALCULATIONS; 4.9 REFERENCES; Chapter 5. Blast Vibration Monitoring for Rock Engineering; 5.1 INTRODUCTION; 5.2 RANGE OF BLAST EFFECTS; 5.3 CHARACTER OF BLAST EXCITATION AND STRUCTURAL RESPONSE 5.4 MEASUREMENT INSTRUMENTS AND THEIR DEPLOYMENT5.5 STRUCTURAL RESPONSE; 5.6 CONTROLLING BLAST EFFECTS; 5.7 REFERENCES; Chapter 6. Computer Modeling and Simulation of

1.

	Percussive Drilling of Rock; 6.1 INTRODUCTION; 6.2 ELASTIC WAVES IN RODS; 6.3 MODELING PERCUSSIVE DRILLING; 6.4 SIMULATION AND VALIDATION; 6.5 SUMMARY AND CONCLUSIONS; 6.6 REFERENCES; Chapter 7. The Mechanics of Rock Cutting; 7.1 INTRODUCTION; 7.2 EXCAVATION MACHINES; 7.3 DRAG PICK CUTTING; 7.4 CUTTING TOOL MATERIALS AND WEAR; 7.5 DISK CUTTERS; 7.6 CUTTABILITY AND MACHINE PERFORMANCE; 7.7 CONCLUSIONS AND THE FUTURE 7.8 REFERENCESChapter 8. Theoretical and Practical Rules for Mechanical Rock Excavation; 8.1 HISTORY AND ASSESSMENT OF EXCAVATING MACHINES; 8.2 MODELING OF TOOL-ROCK INTERACTION; 8.3 MODELING OF ROCK CUTTING HEADS; 8.4 VALIDATION OF THEORETICAL MODELS AND MACHINE SIMULATION; 8.5 ADAPTATION OF MECHANICAL EXCAVATION TO A HARSH ENVIRONMENT; 8.6 CONCLUSIONS AND FUTURE PROSPECTS OF MECHANICAL ROCK EXCAVATION; 8.7 NOMENCLATURE; 8.8 REFERENCES; Chapter 9. The Use of Water Jets for Rock Excavation; 9.1 INTRODUCTION; 9.2 CONTINUOUS JETS; 9.3 DISCONTINUOUS JETS; 9.4 CAVITATING WATER
	JET § .5 ABRASIVE WATER JETS9.6 COMBINED USE OF HIGH PRESSURE JETS AND MECHANICAL CUTTING TOOLS; 9.7 CONCLUSIONS; 9.8 REFERENCES; Chapter 10. TBM Performance Analysis with Reference to Rock Properties; 10.1 INTRODUCTION; 10.2 TBM SYSTEM DESCRIPTION; 10.3 ROCK PROPERTIES; 10.4 ROCK PROPERTY IMPACT ON TBM PENETRATION RATE; 10.5 ROCK PROPERTY IMPACT ON CUTTING TOOLS; 10.6 ROCK PROPERTY IMPACT ON UTILIZATION; 10.7 THE FUTURE; 10.8 REFERENCES; Chapter 11. The Effects of Rock Properties on the Economics of Full Face TBMs; 11.1 INTRODUCTION; 11.2 THE ECONOMICS OF TBM TUNNEL DRIVING 11.3 COST/PERFORMANCE CRITERIA RELATING TO ROCK PROPERTIES
Sommario/riassunto	Excavation, Support and Monitoring