Pipeline contracting can be rewarding work -- or a profitable sideline for any excavation contractor. But not everyone who owns a backhoe is ready to start bidding water, sewer and drainage jobs. This practical manual can help you develop the skills needed to succeed as an underground utility contractor. -- back cover.

"THE MOST COMPREHENSIVE AND CURRENT GUIDE TO THE PROPERTIES, BEHAVIOR, AND TECHNOLOGY OF CONCRETE

This thoroughly updated edition contains new information on: Recently built construction projects worldwide Shrinkage-reducing admixtures Self-consolidating concrete, pervious concrete, internal curing, and other cutting-edge innovations Modeling of ice formation and alkali-aggregate reaction in concrete Environmental impact of concrete Each chapter begins with a preview of the contents and ends with a self-test and a guide for further reading. More than 300 drawings and photographs illustrate the topics discussed in this definitive text on concrete.

Comprehensive coverage includes: Microstructure of concrete Strength Dimensional stability Durability Hydraulic cements Aggregates Admixtures Proportioning concrete mixtures Concrete at early age Nondestructive methods Progress in concrete technology Advances in concrete mechanics Global warming and concrete in the future "--

The North American Tunneling Conference is the premier forum to discuss new trends and developments in underground construction in North America. With every conference, the number of attendees and breadth of topics grows. North American Tunneling: 2014 Proceedings reflects the theme for the 2014 conference, "Mission Possible." The authors share new theories, novel innovations, and the latest tools that make what once may have been perceived as impossible, now possible. The authors of 128 papers share the latest case histories, expertise, lessons learned, and real-world applications from around the globe on a wide range of topics. They cover the successes and failures of challenging construction projects. Read about challenging design issues, fresh approaches on performance, future projects, and industry trends as well as ground movement and support, structure analysis, risk and cost management, rock tunnels, caverns and shafts, TBM technology and selection, and water and wastewater conveyance.

A practical guide to SUSTAINABLE THERMAL STORAGE SYSTEMS

Sustainable Thermal Storage Systems: Planning, Design, and Operations offers proven techniques for reducing energy costs, on-peak demand, capital costs, and pollution using thermal storage systems. Written by an expert in the field, this book discusses sustainability requirements, advantages and disadvantages of various systems, and the relationship among loads, equipment choices, and system selection. Real-world case studies examine chilled water thermal storage and ice thermal storage. Tips for operating a thermal storage plant to maximize investment are also provided in this valuable resource.

Comprehensive coverage includes: Applicability and types of thermal storage systems Sensible thermal storage systems Latent thermal storage systems Heating storage systems Thermal storage system sizing Conducting a feasibility study Estimating energy use and analyzing costs Thermal storage design applications Thermal storage tank specifications Operating and control strategies Testing and commissioning
IT'S ALL HERE! THE CONCRETE AND MASONRY INFORMATION YOU NEED TO WORK MORE EFFICIENTLY, AVOID COSTLY PROBLEMS AND MISTAKES, MINIMIZE RISK, REDUCE WASTE AND MAXIMIZE PROFITS! Successful project completion depends on information! Here's your one-stop, reliable source for concise answers to all your questions about concrete and masonry. Industry experts Christine Beall and Rochelle Jaffe save you countless hours of searching through dozens of manuals or esoteric pamphlets and present the data in a quick-find, straightforward, heavily illustrated format. Beall and Jaffe know exactly what architects, engineers, and contractors need to know about concrete and masonry to get the job done right. Look to "Concrete and Masonry Databook" for fingertip access to valuable practice tools and job-simplifying material such as:

- More than 1000 tables, charts, graphs, and line drawings
- Guidance on thermal, fire, and weather resistance
- Current ASTM, ACI, and TMS standards
- UBC, MSJC, and IBC code requirements
- Essential concrete and masonry data
- Listings of industry standards

"Concrete and Masonry Databook" provides thorough, detailed coverage of key topics, including:

- Products and materials
- Mortar, grout, and concrete mixes
- Formwork and reinforcements
- Site and landscape elements
- Wall and floor systems
- And much more

Invaluable for those working in both the commercial and residential markets, here is the single definitive volume on concrete and masonry.

Practising engineers on site, in the design office or in client organizations will find this book an excellent introduction to the design and construction of sprayed concrete lined (SCL) tunnels. The complex behaviour of the early age behaviour of the sprayed concrete requires careful management. This book covers all aspects of SCL tunnelling - from the constituents of sprayed concrete to detailed design and management during construction. Although there is a close interdependence between all the facets of sprayed concrete, few engineers have the right breadth of experience and expertise, and this urgently needs to be transferred to the wider engineering community. Disseminating essential information for tunnelling engineers, Sprayed Concrete Lined Tunnels is key reading for all involved in or studying the process.

Containing the proceedings of the 14th Conference on Studies, Repairs and Maintenance of Heritage Architecture (STREMAH 2015), this book provides the necessary scientific knowledge required to formulate regulatory policies and to ensure effective ways of preserving the architectural heritage. First held in 1989, the STREMAH conference attracts an extensive range of quality contributions from scientists, architects, engineers and restoration experts from all over the world dealing with various aspects of heritage buildings. The conference proceedings cover a wide range of topics related to the historical aspects and the reuse of heritage buildings, as well as technical issues on the structural integrity of different types of buildings, such as those constructed with materials as varied as iron and steel, concrete, masonry, wood or earth. Material characterisation techniques are also addressed, including non-destructive tests via computer simulation. Other topics include: Surveying and monitoring; Performance and maintenance; Modern (19th/20th century) heritage; Maritime heritage; Simulation and modelling; Material characterisation; New technologies or materials; Corrosion and material decay; Seismic vulnerability; Assessment and re-use of heritage buildings; Heritage and tourism; Social and economic aspects in heritage; Guidelines, codes and regulations for heritage; Heritage management; Defence heritage; Industrial heritage; Transportation heritage.

This manual was prepared by the U.S. Army Corps of Engineers and provides technical criteria and guidance for the planning, design, and construction of tunnels and shafts in rock for civil works projects. Specific areas covered include geological and geotechnical explorations required, construction of tunnels and shafts, design considerations, geomechanical analysis, design of linings, and instrumentation and monitoring. The manual emphasizes design, construction and an understanding of the methods, and conditions of construction essential to the preparation of good designs.

This manual provides guidance on evaluating the condition of the concrete in a structure, relating the condition of the concrete to the underlying cause or causes of that condition, selecting an appropriate repair material and method for any deficiency found, and using the selected materials and methods to repair or rehabilitate the structure. Guidance is also included on maintenance of concrete and on preparation of concrete investigation reports for repair and rehabilitation projects. Considerations for certain specialized types of rehabilitation projects are also given.

This third edition of the SME Mining Engineering Handbook reaffirms its international reputation as "the handbook..."
Download Free 506r 05 Guide To Shotcrete
Structures such as tunnels, which facilitate transport and provide gas, water and other supplies. Underground space may also be utilised for living, working and recreational facilities and industrial storage. These volumes focus on underground city design and planning; geotechnical survey and improvement of ground mass; and research, development and design of underground constructions in built-up areas. Also covered is the construction and monitoring of urban tunnels, including underground constructions executed from the surface; distribution and management of risks and accidents during tunnelling; tunnel equipment; fire and operational safety. This collection of papers will be invaluable to researchers, scientists, engineers and professionals working in the underground space.

Discusses the Bureau of Reclamation's methodology for concrete repair. Addresses the more common causes of damage to concrete. Identifies the methods and materials most successful in repairing concrete damage. This Special Issue presents the latest advances in the field of Textile-Reinforced Cement Composites, including Textile-Reinforced Concrete (TRC), Textile-Reinforced Mortar (TRM), Fabric-Reinforced Cementitious Matrix (FRCM), etc. These composite materials distinguish themselves from other fibre-reinforced concrete materials by their strain-hardening behaviour under tensile loading. This Special Issue is composed of 14 papers covering new insights in structural and material engineering. The papers include investigations on the level of the fibre reinforcement system as well as on the level of the composites, investigating their impact and fatigue behaviour, durability and fire behaviour. Both the strengthening of existing structures and the development of new structural systems such as lightweight sandwich systems are presented, and analysis and design methods are discussed. This Special Issue demonstrates the broadness and intensity of the ongoing advancements in the field of Textile-Reinforced Cement composites and the importance of several future research directions.

This classic reference has established the value of petrography as a powerful method for the investigation of concrete as a material. It provides an authoritative and well-illustrated review of concrete composition and textures, including the causes of defects, deterioration, and failure that can be identified using a petrological microscope. This new edition is entirely revised and updated and also greatly extended to take account of new scientific developments and significant improvements in instrumentation and to reflect current laboratory working practices, as well as to reflect new understanding of the performance of concrete and related materials. Now in full color throughout, Concrete Petrography, Second Edition provides case study examples, with appropriate explanatory discussions and practical advice on selecting, handling and preparing specimens. It assists and guides the engineer, the trainee and the experienced petrographer in understanding the scientific evidence that is basic to petrographic analysis and so will lead to more accurate and timely diagnosis and treatment of problems in structural concrete. This book includes: Contributions in specialist areas by internationally recognized experts Explanation of computer techniques as an aid to petrography Full coverage of inspection, sampling, and specimen preparation New sections covering recent technological development of equipment Guidance on observation of cement and concrete mineralogy and microfabrics Discussion and illustrative examples of deterioration and failure mechanisms New work and guidance on the determination of water/cement ratio New color illustrations and micrographs throughout Thorough updating of standards, other authoritative publications, and references A fully revised, extended and updated glossary of optical and other properties.
This report provides technical information on pervious concrete's application, design methods, materials, properties, mixture proportioning, construction methods, testing, and inspection. The term 'pervious concrete' typically describes a near-zero-slump, open-graded material consisting of portland cement, coarse aggregate, little or no fine aggregate, admixtures, and water.