An essential guide to improving preliminary geotechnical analysis and design from limited data

Soil Properties and their Correlations, Second Edition provides a summary of commonly-used soil engineering properties and gives a wide range of correlations between the various properties, presented in the context of how they will be used in geotechnical design.

The book is divided into 11 chapters: Commonly-measured properties; Grading and plasticity; Density; Permeability, Consolidation and settlement; Shear strength; California bearing ratio; Shrinkage and swelling characteristics; Frost susceptibility; Susceptibility to combustion; and Soil-structure interfaces. In addition, there are two appendices: Soil classification systems; and Sampling methods.

This new, more comprehensive, edition provides material that would be of practical assistance to those faced with the problem of having to estimate soil behaviour from little or no laboratory test data.

Key features:

• Soil properties explained in practical terms.

• A large number of correlations between different soil properties.

• A valuable aid for assessing design values of properties.

• Clear statements on practical limitations and accuracy.
An invaluable source of reference for experienced professionals working on geotechnical design, it will also give students and early-career engineers an in-depth appreciation of the appropriate use of each property and the pitfalls to avoid.

ABOUT THE AUTHOR

Mike Carter is a civil and geotechnical engineer whose experience ranges from the practical, including site-based supervision of construction work, to the analytical, including the preparation of geotechnical design manuals and computer-based methods for consulting engineers. He has worked both in the UK and overseas; for consulting engineers, a contractor, a specialist site investigation contractor and as a university lecturer. In terms of engineering complexity, projects he has worked on have varied from the basic, such rural roads in East Africa and India, to the large and complex, such as the construction of an artificial island for Macau International Airport. He has also been involved in the analysis and rectification of numerous earthworks failures and has worked as a lecturer and trainer in the UK, Indonesia and Sri Lanka. He is the author of three books on geotechnical engineering.

Dr Bentley is an Engineering Geologist. During his long academic career at Cardiff University he has acted as a consultant to many large UK companies including the Department of the Environment (UK). He has also been retained as a consultant to the Departments of Public Works in Brunei and Saudi Arabia. He has supervised 12 PhD and over 60 MSc students; most of the PhD research topics were collaborative with industry. He has published 110 technical papers. Highlights of his research work include the first edition of the textbook 'Correlation of Soil Properties' which was adopted by many consultancy firms as a standard reference book. Also the visualisation software, 'STRATA', which was successfully commercialised and sold into over 100 companies in 12 countries worldwide.

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