



Reinforced Soil and its Engineering Applications, Third Edition

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About the Book

Reinforced soil is a composite material formed by the association of frictional soil and tension-resistant elements in the form of sheets, strips, nets or mats of metal, synthetic fabrics, or fibre reinforced plastics and arranged in the soil mass in such a way as to reduce or suppress the tensile strain that might develop under gravity and boundary forces. The variety and range of applications of reinforced soil technique are unlimited. Jones (1985) identified several field applications, viz., retaining walls, abutments, quay walls, embankments, dams, hill roads, housing, foundations, railways, industry, pipe works, waterway structures and underground structures. In several countries structures have been constructed using this technique and the concept has become very popular. The book covers all the important topics like Basic Mechanism, Strength Characteristics, Frictional Characteristics, Reinforced Soil, Wall, Wall with Reinforced Backfill, Foundation on Reinforced Soil, Soil Nailing and Randomly Distributed soil. Each chapter is supported by illustrative examples for easy understanding. In this edition, chapters on Reinforced Soil Wall, Foundation on Reinforced Soil, and Randomly distributed reinforced soil have been substantially modified making the book more useful. The book would well serve and benefit undergraduate and postgraduate students, researchers and professional geotechnical engineers.

Salient Features

The book is rich in author's experiential insights and explores the various aspects of reinforced soil which find their applications in civil and structural engineering.

A large number of problems with detailed solutions have been included in the book, mostly real-world type.

Includes end-of-the-chapter practical problems, and references.

Provides all the formulae, charts, and examples. All units are in SI units.

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About the Author

Swami Saran :- Dr. Swami Saran, Professor Emeritus in the Department of Earthquake Engineering, Indian Institute of Technology, Roorkee, obtained Ph.D. 1969 from the university of Roorkee. An established teacher, researcher and active consultant, he is the recipient of Khosla Research Awards (three times), IGS Awards (six times) including the prestigious Kuckulmann Award and also awards from I.S.E.T., I.S.T.E. and I.S.C.M.S. He has guided 27 Ph.D theses, 73 Master's theses, published 185 research papers and 5 books. Dr. Saran has initiated research work on reinforced soil, analysis of foundation using constitutive laws and displacement dependent static dynamic analysis of retaining walls. He has provided consultancy to more than 300 projects of national importance, including multistoried buildings, cement and tyre factories, thermal

plants, machine foundation, towers and chimneys, bridges, oil storage tanks, historical monuments, ground improvement problems etc. He visited UK in 1974 under an exchange programme and AIT Bangkok as a Visiting Professor in 1987. He has also visited USA, Australia and Nepal to attend conferences. He is a member of several national and international professional bodies. A national Conferences (NCFRS-2007) was organized at IIT Roorkee to honor him.