## Reinforced Soil Engineering

Advances in Research and Practice



Hoe I. Ling
Dov Leshchinsky
Fumio Tatsuoka

## Contents

Preface Contributors		iii ix
1.	Civil and Environmental Applications of Geosynthetics  Hoe I. Ling	1
2.	Performance Properties of Geogrids W. Voskamp	19
3.	Unit Cell Testing of Reinforced Soils Hoe I. Ling	37
4.	Modeling the Time-Dependent Behavior of Geosynthetically Reinforced Soil Structures with Cohesive Backfill V. N. Kaliakin and M. Dechasakulsom	69
5.	Issue and Nonissue in Block Walls as Implied Through Computer-Aided Design Dov Leshchinsky	85
6.	Application of Sliding Block Concept to Geosynthetic-Constructed Facilities  Hoe I. Ling	95

vi	Contents
----	----------

7.	Failure of an 8-Meter-High Segmental Block Wall in the Northeast United States  C. M. Reith, G. S. Paxson, and A. W. Cadden	113
8.	Displacement Monitoring at Verrand High Reinforced Soil Structure G. Sembenelli and P. Sembenelli	123
9.	U.K. Case Study: Bluewater Retail and Leisure Destination Reinforced Soil Slopes to Form Steep-Sided New Lakes J. H. Dixon	137
10.	State of the Practice: Past, Current, and Future Perspectives of Reinforced Soil Retaining Structures in Turkey Muhannad Ismeik and Erol Guler	153
11.	Recent Experiences of Reinforced Soil Retaining Structures in China Li Guangxin and Wang Zhao	165
12.	Large-Scale Reinforced Clay Walls Backfilled with Clay at Cheng Kung University Ching-Chuan Huang, J. F. Wu, B. N. Huang, A. L. Leu, G. Y. Jean, and H. Y. Shan	187
13.	Geotextile Reinforced Abutments on Soft Foundation Ennio M. Palmeira, André R. S. Fahel, and Luiz E. P. Campos	221
14.	Geosynthetic Reinforcement in the Mitigation of Pipeline Flotation Yoshiyuki Mohri, Toshinori Kawabata, and Hoe I. Ling	237
15.	Practice and Research of Geosynthetic Reinforced Soil Walls in Australia Sik-Cheung Robert Lo	253
16.	Geosynthetic Reinforced Containment Dike Constructed over Soft Foundation: Numerical Analysis Hoe I. Ling, Dongyi Yue, and V. N. Kaliakin	283
17.	Post-Earthquake Investigation of Several Geosynthetic Reinforced Soil Retaining Walls and Slopes During Ji-Ji Earthquake of Taiwan Hoe I. Ling and Dov Leshchinsky	297

Contents		vii
18.	Model Tests of Seismic Stability of Several Types of Soil Retaining Walls Junichi Koseki, Fumio Tatsuoka, Kenji Watanabe, Masaru Tateyama, Kenichi Kojima, and Yulman Munaf	317
19.	Performance of Geosynthetic Reinforced Soil Wall and Reinforced Earth Wall Subject to Blast Loading: Experimental and Numerical Study  Soon Hoe Chew, Siew Ann Tan, G. P. Karunaratne, and Chiew Chiat Ng	359
20.	Shaking Table Tests of Embankment Models Reinforced with Geotextiles S. Tani, S. Ihara, Y. Yokota, and Y. Okabe	391
21.	Centrifuge Modeling of Seismic Performance of Reinforced Earth Structures Jiro Takemura and Akihiro Takahashi	417
22.	Performance and Analysis of Arifiye Overpass Reinforced Earth Walls During the 1999 Kocaeli (Turkey) Earthquake C. Guney Olgun and James R. Martin II	443
23.	Dynamic Simulation of the Reinforced Slope Failure at Chi-Nan University During the 1999 Chi-Chi Earthquake Nelson N. S. Chou and Chia-Cheng Fan	465
24.	A Compact Probabilistic Representation of the Chi-Chi Earthquake Ground Motion  A. W. Smyth, S. F. Masri, and C. H. Loh	481
25.	A Critical Review of Full-Scale Shaking Table Tests Conducted on Reinforced Soil Retaining Walls <i>Hoe I. Ling</i>	491
Index		511