

7th EuroGeo Conference

IOP Conference Series: Materials Science and Engineering
Volume 1260

Warsaw, Poland
3 - 7 September 2022

ISBN: 978-1-7138-6156-0
ISSN: 1757-8981

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution 3.0 International Licence.
Licence details: <http://creativecommons.org/licenses/by/3.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2022)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

7th European Conference on Geosynthetics EUROGEO-7 <i>Jacek Kawalec</i>	
Peer Review Statement	
Short-Term Design of Geosynthetic-Reinforced Embankments on Soft Foundation Soils..... 1 <i>D Romeo, P Pezzano, P Rimoldi</i>	1
Reduction of Carbon Footprint of Roads Construction Thanks to the Pavement Optimisation with Hexagonal Geogrids 12 <i>P Mazurowski</i>	12
Stress-Dilatancy Relationship of Sand-Rubber Mixtures 22 <i>Z Szypcio, K Dolzyk-Szypcio, A Nurgaliyev</i>	22
Recent Advances in Laterally-Loaded Piles Within Mechanically-Stabilized Earth Walls 30 <i>S Jawad, Jie HanF Asce</i>	30
Investigation of Force Transmission During Indirect Activation of a Geogrid in Transparent Soil..... 42 <i>J Derksen, M Ziegler</i>	42
Sodium Carboxymethyl Cellulose-Enhanced GCLs in Freshwater Reservoirs 53 <i>H O Ozhan</i>	53
Stepped Reinforced Soil Retaining Walls at Railway Corridor Rokycany – Plzeň..... 62 <i>P Hubík, M Kašpar, O Vodáček</i>	62
Effect of Mechanical Damage Under Repeated Loading and Abrasion on the Tensile Behaviour of a Reinforcement Geocomposite..... 69 <i>J R Carneiro, F Carvalho, F Almeida, M de Lurdes Lopes</i>	69
Semipermeable Membrane Behavior of Geosynthetic Clay Liners..... 81 <i>C D Shackelford, J Scalia</i>	81
The Application of the Observational Procedure for Construction of Athletic Stadium in Bytów Using Geosynthetic Reinforcement in Complicated Ground Conditions 93 <i>A Łopatka, M Pilch</i>	93
Resilient Modulus of Crushed Stone Material Reinforced with Geogrids 101 <i>J Kaluder, S Lenart, M Mulabdic, K Minazek</i>	101
The Influence of Thermally and Mechanically Induced Short-Term Strains on Smooth HDPE Geomembrane Properties 108 <i>M Mulabdić, A Jukić, F Faraguna, K Minažek</i>	108
Geodynamic Modelling of Geogrid-Stabilised Aggregate on Soft Ground in High Speed Rail Environments Using Field-Derived Shear Wave Data. 117 <i>B Ogunmakin, K Zamara, J Kawalec, M C Todisco</i>	117
A Rheological Model for Georeinforced Embankments Based on Piled Foundations 128 <i>V Mangraviti, L Flessati, C di Prisco</i>	128

Simulating Mechanical Response of GRS Walls with Different Construction Methods	134
<i>KM Krishna, A Prashant</i>	
The Behaviour of Containment Bund Using Stacked Geotextile Tubes Filled with Lightly Cemented Soft Soil.....	143
<i>J W Koh, S H Chew, Y J E Aw, K E Chua, H M A Yim, D S E Tan, Y S Toh</i>	
Innovative Geocomposite for Dredged Sediments Depollution	155
<i>B W Forogo, G Stolz, M Coquery, S Bonelli, N Chaouch, N Touze</i>	
Evaluation of the Performance of a Drainage Geocomposite in a Simple Cover System Based on 10 Year Measurements	168
<i>E Birle, M Melsbach, D Heyer</i>	
Alternative Laboratory Approach for Determination of Geogrids Performance in Mechanically Stabilized Layers	178
<i>Zikmund Rakowski, Leos Horníček, Jacek Kawalec</i>	
Effects of Geogrid Reinforcement on the Seismic Performance of Lightweight Embankments.....	186
<i>A Edinçliler, Y S Toksoy</i>	
Seismic Design of Geosynthetic-Reinforced Earth Retaining Walls Following a Pseudo-Static Approach	197
<i>D Gaudio, L Masini, S Rampello</i>	
Plastic in the Ocean and Global Warming: New Challenges for Geosynthetics	208
<i>H Hoyme, L Vollmert, H Ehrenberg</i>	
Mechanically Stabilised Layer by Geogrids in Road Construction as an Environmental Aspect of Sustainable Development	217
<i>M Golos</i>	
Applications of Microbially Induced Calcium Carbonate Precipitation on Non-Woven Geotextiles	227
<i>E Duman, Y E Sarıçiçek, O Pekcan, R Gurbanov, A G Gözen</i>	
Mechanical Improvement of a Reinforced Sand with Açai (Euterpe Oleracea) Fibers	235
<i>M M Lopes, M D T Casagrande</i>	
Design Method for Geogrid Stabilisation of Railway Ballast and Subballast	243
<i>P Rimoldi, P Pezzano, F Trovato</i>	
Experimental Study to Evaluate Soil Water Retention Curve of HYPER Clay Geosynthetic Clay Liner	263
<i>M K Khan, M D Camillis, G D Emidio, A Bezuijen</i>	
Scour Protection Effects on the Dynamic Response of Jacket Structures Under Extreme Load Events	271
<i>A Khansari, H Hoyme, H Oumeraci</i>	
Performance of Drainage Geocomposites Applied as Capillary Break Layers	284
<i>T Szatmári, S Fischer</i>	
Modified Multiaxial Tensile Tests with Geogrids in Soil Contact	292
<i>H Zanzinger, D Alexiew</i>	
Micro-Structural Analysis of Cement Composites Using Stone Waste: A Review	303
<i>K Devi, B Saini, P Aggarwal</i>	

Reliability of Road Pavement Constructions Reinforced by Geosynthetic Materials	313
<i>I Gameliak, A Nikolaichuk, G Zhurba</i>	
FEM Model for Analysing the Interaction of a Geomatrix with a Subsoil.....	321
<i>Marian Lupiezowiec</i>	
Reinforced Soil Structures: From Standard Design to BIM	336
<i>F Trovato, G Intrevado, P Pezzano, G Lugli</i>	
Modelling the Impact of Landslides on Geosynthetics-Reinforced Barrier Using DEM-FDM Analyses	346
<i>S Cuomo, M Camusso, P Gambardella, S Moretti, L Frigo</i>	
Durability of EPDM Geomembranes - Lifetime Estimation by Using High Pressure Autoclave Test Method	359
<i>A Armani, H Zanzinger, A Monami, W Hahn, B Amat</i>	
Numerical Analysis of Stress Concentration Around Bridge Bank Seat in Geosynthetic Reinforced Soil – Integrated Bridge Systems (GRS-IBS)	369
<i>Bahia S El Refai, Patrick J Naughton</i>	
Reclamation of Fertilizer Sludge Pond: The Azomures Case Study in Romania	381
<i>L Carbone, O Syllwasschy, T Hasslacher, U Hein</i>	
CE Marking for Geosynthetics	390
<i>Ph. Delmas, H. Ehrenberg</i>	
Design Guide for Geosynthetic Barrier Systems as Groundwater Protection in Road Construction	400
<i>K P von Maubeuge, A Müller-Kirchenbauer, C Schlötzer</i>	
Basal Reinforcement of Embankment Over Voids and Soil Subsidence Area – New Standard XP G38065	411
<i>A Nancey, P Delmas</i>	
Investigation Progress of Geogrid-Soil Interaction Using DEM	419
<i>Z Wang, B Ma, G Yang, M Ziegler</i>	
Finite Difference Modelling of Deformable Geosynthetics-Reinforced Barriers (DGRB) Under the Dynamic Impact of Debris Avalanches.....	436
<i>S Moretti, S Cuomo, L Frigo</i>	
Current Condition of Recovery Method of Disaster Embankments Using Geo-Cell and Soil Reinforcement Bar.....	445
<i>K Kojima, G Noda, S Yazaki, M Harata, K Yokota</i>	
Use of ASTM D8058 Flexural Strength Test Method to Assess Overall GCCM Performance	451
<i>M Kujawski, L Church, W Crawford</i>	
Field Measurements in a Partly Submerged Woven Geotextile-Reinforced Pile-Supported Embankment.....	461
<i>S J M van Eekelen, R A Zwaan, A Nancey, M Hazenkamp, Y H Jung</i>	
Application of Eurocode 7 for the Analysis and Design of Veneer Cover Soils in Static and Seismic Load Conditions	474
<i>P Rimoldi, P Pezzano, A Gebely</i>	

Geogrid Stabilisation Application – Review of Strain Measurement Methods, Research and Implications on Design Approaches 495
K Zamara, G Fowmes, J Kawalec

Two Mechanisms in Reinforced Soil Structures Subjected to Seismic Forces 504
S Sharma, A Prashant

Author Index