

Table of Contents

Preface

Chapter 1: Reliability Assessment and Restoration of Concrete Structures and Elements

Determining Criteria for Assessment of RC Structures Affected by Carbonation-Induced Corrosion J. Mlčoch and M. Sýkora	3
Effect of Addition of Chromate to Concrete on the Bond Strength of Hot-Dip Galvanized Ribbed Rebar at Ambient Temperature P. Pokorný and D. Čítek	10
Effect of Binder Components on the pH of Concrete Mixture with Low pH Intended for Deep Geological Repository for Radioactive Waste in the Czech Republic R. Pernicová, D. Čítek, D. Dobiáš, J. Kolisko, T. Mandlík and L. Hausmannová	15
Effect of Specimen Geometry on Selected Physical and Mechanical Properties of Epoxy-Based Building Materials R. Hermann, J. Hodul and Š. Keprdová	24
Experimental Study of the Recycled Plastic Aggregate Lightweight Composites Based on Different Kinds of Binder V. Gregorová, Z. Štefunková and M. Ledererová	32
Mechanical Properties of Mortars Based on Roman Cement with the Addition of Power Plant Fly Ash J. Daňková, T. Majstříková, D. Bujdoš and P. Mec	39
NDT Monitoring of Alkali-Activated Material Carbonation I. Plšková, M. Matysík, L. Topolář and P. Hrubý	45
Sensitivity Assessment of the Nonlinear Resonant Ultrasonic Spectroscopy for Concrete Damage Detection M. Matysík, I. Plšková and Z. Chobola	51
Steel Reinforcement Corrosion - Its Impact on Features of Steel PSC Strand V. Vacek, J. Kolisko, P. Pokorný and M. Kostecká	57
The Curing of Concrete Samples with Water - Experimental Verification of the Concrete Properties M. Dubek, M. Bederka and P. Makýš	65
The Issue of Absence of Standards for Properties and Durability of Exposed Concrete M. Utěšená, J. Sestak and R. Pernicová	70

Chapter 2: Surface Treatment, Moisture Protection and Thermal Insulation

Design and Comparison of the Different Material Compositions of the External Masonry Construction of the Building K.E. Hellová, A. Struhárová, T. Lajošová and M. Kostecká	79
Electrospun SiO₂ Nanotextiles for Preservation of a Tangible Cultural Heritage P. Tichá, M. Domonkos, J. Trejbal, P. Demo and Z. Prošek	86
Evaluation of Aggressive Chemicals Effect on CIPP Liners J. Majerová, J. Hodul, R. Drochytka and Š. Keprdová	92
Impact of Surface Treatment of Historic Bricks on the Process of Water Vapours Diffusion L. Balík, L. Kudrnáčová, Š. Nenadálova and M. Kostecká	98
Mortars Based on a Ternary Binder from Lime, Metakaolin and Calcium Hemihydrate V. Pavlík and A. Struhárová	105
Possibility of Using Microwave Radiation for Rehabilitation of Historical Masonry Constructions V. Kvapilová and K. Šuhajda	119

Revitalisation of Lightweight Cladding of Buildings P. Liška and B. Nečasová	127
Solidification Methods of Stabilizing Dangerous Wastes Used as Fillers for Secondary Protection of Building Structures T. Žlebek, J. Hodul, L. Mészárosová, V. Matušková and R. Drochytka	135
Stress/Strain Behaviour of Mechanical and Adhesive Joints in Timber Facade Applications B. Nečasová, L. Pavel and M. Novotný	142
Effect of Fibre Additives in Concrete on Change of Thermophysical Properties G. Pavlendová and P. Šín	150

Chapter 3: Reliability Assessment and Restoration of Architectural Structures

Reconstruction of the Historic Bridge Located in Portz Insel D. Boháčová and E. Burgetová	159
Reliability Analysis of St. Barbara's Church in Otovice C. Mahato and P. Kuklík	166
Stability Analysis of St Barbara Church in Otovice I. Božulić and P. Kuklík	173
Monitoring of Historical Structure by IoT Technology with Use of ESP32 Development Board M. Vokáč, L. Balík and P. Bouška	180