## **Table of Contents**

**Preface and Committees** 

## **Chapter 1: Timber Protection**

Protection of Timber from Combustion and Burning Using Alkaline Aluminosilicate-Based Coatings	
P.V. Krivenko, S. Guzii and A. Kravchenko	3
Reconstruction of a Baroque Open Beam Ceiling Based on Material Analysis M. Kloiber, J. Válek, J. Bláha and J. Čechová	10
Non-Destructive and Minimal-Invasive Status Determination and Heritage Friendly Remediation of the Wooden Structures of Bothmer Castle G. Haroske, U. Diederichs and V. Petranek	20
Efficiency of Liquidation of Biotic Pests Using Microwave Radiation M. Novotný, J. Škramlík, K. Šuhajda, J. Sobotka, J. Gintar and T. Kalábová	27
The Evaluation of Modifications to Glued Joints Utilizing Epoxy-Based Adhesive for Structural Timber Bonding	27
J. Vanerek, A. Benešová, J. Řáhel' and P. Sťahel	37
Chapter 2: Surface Treatments	
Investigation of the Causes of Colour Inconsistency in the Facades of Vrchotovy Janovice Castle	
Á. Dufka, P. Rovnaníková and R. Drochytka	45
Advanced, Thermal Insulation Materials Suitable for Insulation and Repair of Buildings J. Hroudová, J. Zach, R. Hela and A. Korjenic	54
Hydrophobized Lime Plasters as Protective Surface in Wet Rooms in Monument Preservation B. Wolff	60
B. Wolff	00
CI A DILLIPA CAT	
Chapter 3: Rehabilitation of Masonry	
Impact of the Chemical Injection Method on the Dispersion of the Injected Agents in	
	73
Impact of the Chemical Injection Method on the Dispersion of the Injected Agents in Masonry Š. Nenadálova, L. Balík, J. Kolísko and T. Klečka Several Comments on the Broumov Group of Churches Using Experiances with Water Table Variation on other Historical Sites	
Impact of the Chemical Injection Method on the Dispersion of the Injected Agents in Masonry Š. Nenadálova, L. Balík, J. Kolísko and T. Klečka Several Comments on the Broumov Group of Churches Using Experiances with Water	73 79
Impact of the Chemical Injection Method on the Dispersion of the Injected Agents in Masonry Š. Nenadálova, L. Balík, J. Kolísko and T. Klečka  Several Comments on the Broumov Group of Churches Using Experiances with Water Table Variation on other Historical Sites P. Kuklík and J. Záleský  Efficiency Analysis of Materials Used for Mechanical Methods for Damp Masonry Rehabilitation	79
Impact of the Chemical Injection Method on the Dispersion of the Injected Agents in Masonry Š. Nenadálova, L. Balík, J. Kolísko and T. Klečka Several Comments on the Broumov Group of Churches Using Experiances with Water Table Variation on other Historical Sites P. Kuklík and J. Záleský Efficiency Analysis of Materials Used for Mechanical Methods for Damp Masonry Rehabilitation L. Mizerová and R. Smolka Role of the Geologists in the Process of Monuments Ashlar Masonry Repair	79 87
Impact of the Chemical Injection Method on the Dispersion of the Injected Agents in Masonry Š. Nenadálova, L. Balík, J. Kolísko and T. Klečka  Several Comments on the Broumov Group of Churches Using Experiances with Water Table Variation on other Historical Sites P. Kuklík and J. Záleský  Efficiency Analysis of Materials Used for Mechanical Methods for Damp Masonry Rehabilitation L. Mizerová and R. Smolka  Role of the Geologists in the Process of Monuments Ashlar Masonry Repair K. Kovářová, J. Schröfel and S. Chamra  Survey of the Part of Medieval Fortification System of Prague Lesser Town	79 87 93
Impact of the Chemical Injection Method on the Dispersion of the Injected Agents in Masonry S. Nenadálova, L. Balík, J. Kolísko and T. Klečka  Several Comments on the Broumov Group of Churches Using Experiances with Water Table Variation on other Historical Sites P. Kuklík and J. Záleský  Efficiency Analysis of Materials Used for Mechanical Methods for Damp Masonry Rehabilitation L. Mizerová and R. Smolka  Role of the Geologists in the Process of Monuments Ashlar Masonry Repair K. Kovářová, J. Schröfel and S. Chamra	79 87
Impact of the Chemical Injection Method on the Dispersion of the Injected Agents in Masonry Š. Nenadálova, L. Balík, J. Kolísko and T. Klečka  Several Comments on the Broumov Group of Churches Using Experiances with Water Table Variation on other Historical Sites P. Kuklík and J. Záleský  Efficiency Analysis of Materials Used for Mechanical Methods for Damp Masonry Rehabilitation L. Mizerová and R. Smolka  Role of the Geologists in the Process of Monuments Ashlar Masonry Repair K. Kovářová, J. Schröfel and S. Chamra  Survey of the Part of Medieval Fortification System of Prague Lesser Town	79 87 93
Impact of the Chemical Injection Method on the Dispersion of the Injected Agents in Masonry S. Nenadálova, L. Balík, J. Kolísko and T. Klečka Several Comments on the Broumov Group of Churches Using Experiances with Water Table Variation on other Historical Sites P. Kuklík and J. Záleský Efficiency Analysis of Materials Used for Mechanical Methods for Damp Masonry Rehabilitation L. Mizerová and R. Smolka Role of the Geologists in the Process of Monuments Ashlar Masonry Repair K. Kovářová, J. Schröfel and S. Chamra Survey of the Part of Medieval Fortification System of Prague Lesser Town E. Burgetová and K. Fořtová  Chapter 4: Maintenance of Concrete Structures  Rehabilitation of Concrete Surfaces of Hydropower Engineering Structures Deteriorated by	79 87 93
Impact of the Chemical Injection Method on the Dispersion of the Injected Agents in Masonry S. Nenadálova, L. Balík, J. Kolísko and T. Klečka Several Comments on the Broumov Group of Churches Using Experiances with Water Table Variation on other Historical Sites P. Kuklík and J. Záleský Efficiency Analysis of Materials Used for Mechanical Methods for Damp Masonry Rehabilitation L. Mizerová and R. Smolka Role of the Geologists in the Process of Monuments Ashlar Masonry Repair K. Kovářová, J. Schröfel and S. Chamra Survey of the Part of Medieval Fortification System of Prague Lesser Town E. Burgetová and K. Fořtová  Chapter 4: Maintenance of Concrete Structures  Rehabilitation of Concrete Surfaces of Hydropower Engineering Structures Deteriorated by Soft Corrosion and Cavitation S. Guzii, R. Hela and V. Kyrychok	79 87 93
Impact of the Chemical Injection Method on the Dispersion of the Injected Agents in Masonry S. Nenadálova, L. Balík, J. Kolísko and T. Klečka Several Comments on the Broumov Group of Churches Using Experiances with Water Table Variation on other Historical Sites P. Kuklík and J. Záleský Efficiency Analysis of Materials Used for Mechanical Methods for Damp Masonry Rehabilitation L. Mizerová and R. Smolka Role of the Geologists in the Process of Monuments Ashlar Masonry Repair K. Kovářová, J. Schröfel and S. Chamra Survey of the Part of Medieval Fortification System of Prague Lesser Town E. Burgetová and K. Fořtová  Chapter 4: Maintenance of Concrete Structures  Rehabilitation of Concrete Surfaces of Hydropower Engineering Structures Deteriorated by Soft Corrosion and Cavitation	79 87 93 100

## **Chapter 5: Physicochemical Bases of Building Materials**

Physical and Chemical Properties of Adhesives Based on Geocement for Restoration and Rehabilitation of Building Materials	
G. Vozniuk, E. Kavalerova, P.V. Krivenko and O. Petropavlovsky	123
<b>Investigations on Properties Determining Durability of Novel PCC</b> W. Malorny and M. Plath	130
Study of Alternative Raw Materials Parameters for Modification of Cement-Bonded Particleboards Composition T. Melichar, J. Bydžovský and Š. Keprdová	139
Lightweight Artificial Aggregate Based on Fly Ash for New Rehabilitation Materials P. Sokol, R. Drochytka, V. Černý and E. Helanová	139
Development of Materials Based on Flax for Thermal Insulation and Thermal Rehabilitation of Structures J. Zach, J. Hroudová and N. Žižková	153
Polymer-Modified Cement Composites with Increased Resistance to Elevated Temperatures J. Bydžovský, Á. Dufka and T. Melichar	158
The Influence of the Addition of Secondary Materials to the Thermal-Technical Properties of Filling Materials  Š. Keprdová, J. Bydžovský and K. Křížová	165
Development of Flooring Materials with Cellular Waste E. Tumova and R. Drochytka	172
Amelioration of the Porosity in Silicate Based Materials L. Mészárosová and R. Drochytka	176
3D Data for Calculation of Capillary Conductivity Coefficient J. Škramlík, M. Novotný, O. Fuciman and K. Šuhajda	180
Long Term Behaviour of Portland Limestone Cement Concrete Exposed to Combined Chloride and Sulfate Environment. The Effect of Limestone Content and Mineral Admixtures	
K. Sotiriadis, S. Tsivilis, J. Kosíková and V. Petranek	185
Physico-Mechanical Properties of the Threshold Coupling Made of Secondary Raw Materials for Use in the Rehabilitation and Reconstruction of Buildings R. Smolka, L. Kalousek and L. Mizerová	193
Chapter 6: Statics and Dynamics of Buildings	
Modeling of Historical Timber Roof Truss of Želiv Monastery P. Mec, J. Daňková and T. Murínová	201
Utilization of Splice Skew Joint with Key on Reconstruction of Historical Trusses K. Šobra and P. Fajman	207
Optimal Design of NPP Containment Protection Against Fuel Container Drop E.J. Králik	213
Application of Different Rehabilitation and Strengthening Methods for Insufficient RC Beam-Column Joints Ö. Yurdakul, Ö. Avşar and K. Kilinç	222
Strengthening of Masonry Walls with GFRP Straps – Testing and Application J. Galic, T. Kisicek and M. Galic	230