

Hydrophobe VI

International Conference on Water Repellent Treatment of Building Materials

May 12 / 13 2011 Rome – Italy

Istituto Superiore per la Conservazione ed il Restauro
www.hydrophobeVI.org



The long-term aim of the International Conference is to promote research and development of water repellent treatments in order to improve the durability and prolong the use of buildings and civil engineering structures. In the conference, the technological and scientific advances in application of water repellent agents for building materials will be discussed.

Organizing Committee

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Andrea Macchia (*Italian Association of Conservation Scientists*)

Collaboration: E.Zarbà, S.Cecchi, L.Festa, A. Escudero García

Final Programme

Day 1: May 12th, 2011

9.00 – 9.40 **Registration**

9.40 – 10.00 **Welcome address:** G. Capponi, E. Panés

10.00 – 10.20 **Introductory presentation:** E. Borrelli

Materials: bricks, stones, concrete and other

10.20 – 10.40 **Significance of water repellent treatment for the durability of SHCC**

Wittmann Folker H., Zhang Peng, and Zhao Tie-jun

Qingdao Technological University, Qingdao, China – Aedificat Institute Freiburg, Germany

10.40 – 11.00 **Water-Repellent Silanes Protect the Concrete Ceiling of the Gotthard Road Tunnel**

D. Auer, R. Minery, J. Ihringer

Construction Chemicals Wacker Chemie AG, Germany

11.00 – 11.20 **Influence of Blended Cements on the Performance of Water Repellent Agents.**

M. A. Kargol, U. Mueller, A. Gardei and B. Meng – Federal Institute for Materials Research and Testing, Berlin, Germany

11.20 -11.40 **Break**

Historic and contemporary buildings

11.40 – 12.00 **Tests of two water repellent substances on brick and mortars: do they delay the regrowth of biofilms? The case of the cathedral of La Plata, Buenos Aires province, Argentina**

V. G. Rosato, R. Lofeudo, F. Iloro, M. Gaimaro

LEMIT (Área Estudio y Conservación del Patrimonio), Universidad Tecnológica Nacional, La Plata, Argentina – LEMaC (Área Estructuras y Materiales de Construcción), La Plata, Argentina

12.00 – 12.20 **A survey of polymeric treatments applied on the liberty glazed tiles of the Hungaria Hotel façade**

V. Donà, M. Favaro, L. Nodari, U. Russo, R. Bertonecello

Università degli Studi di Padova, Dipartimento di Scienze Chimiche, Italy – Consiglio Nazionale delle Ricerche, Istituto di Chimica Inorganica e delle Superfici, Padova, Italy

12.20 – 12.50 **Invited speaker presentation**

12.50 – 14.10 : **Lunch**

Analytical approach, application techniques and quality control

14.10 – 14.30 **Characterization of Degradation of Silicon-Based Water Repellents by MALDI-TOF/MS**

H. Herb, A. Gerdes, University of Applied Sciences, Karlsruhe, Germany

14.30 – 14.50 **Combination of quantum-mechanical and experimental investigations for the development of a model of the size and distribution of silane oligomers on the pore surface of mineral based material**

J. Suessmuth, P. G. Weidler, A. Gerdes, University of Applied Sciences – Karlsruhe Institute of Technology, Karlsruhe, Germany

14.50 – 15.10 **Drying of red ceramic brick. Effect of five silicone-based water-repellent treatments**

S. Couto, T. Diaz Gonçalves, J. M. Grandão Lopes, Laboratório Nacional de Engenharia Civil (LNEC), Lisboa, Portugal

15.10 – 15.30 **Can a wet wall be injected in an effective way? Experimental study of spreading and effectiveness of injection products against rising damp**

B. Lubelli, R.P.J. van Hees, A. Hacquebord, Delft University of Technology, Faculty of Architecture – TNO Built Environment and Geosciences, Delft, The Netherlands

15.30 – 15.50 **Innovative evaluation of the performances of water-repellent treatments by IR Thermography.** A. Sansonetti, E. Rosina, F. Gerenzani and N. Ludwig, ICVBC – CNR Dep. BEST Milan Polytechnic Dep. Of Physic – Milan State University

15.50 – 16.10 : **Break**

16.10 – 16.30 **First day closure**

16.30 : *Visit to Tempietto di Bramante*

20.00 : Conference dinner

Day 2: May 13th, 2011

New approaches and special applications

9,00 – 9.20 Application of natural organic materials to produce integral water repellent concrete

Wittmann Folker H., Zhang Rong, Zhao Tie-jun, Wolfseher Roland
Qingdao Technological University, Qingdao, China – Aedificat Institute Freiburg, Germany

9.20 – 9.40 Evaluation of the effect of nano-coatings with water repellent properties on the absorption and drying behaviour of brick

B. Lubelli, Rob P.J. van Hees, Delft University of Technology, Faculty of Architecture – TNO Built Environment and Geosciences, Delft, The Netherlands

9.40 – 10.00 Application of silane-based compounds to produce integral water repellent cementitious materials

Zhao Tie-jun, Wittmann Folker H.
Qingdao Technological University, Qingdao, China, and Aedificat Institute Freiburg, Germany

10.00 – 10.20 Metal Soaps for the Production of Integral Water Repellent Concrete

Li Weihua, Wittmann Folker H., Zhao Tie-jun R. Jiang, R. Wolfseher
Qingdao Technological University, Qingdao, China – Aedificat Institute Freiburg, Germany

10.20 -10.40 In situ polymerization of acrylic monomer with low molecular weight fluorinated polymers for the conservation of stone

S. Vicini, E. Princi, G.i Moggi, L. Gaggero, Università di Genova, Italy

10.40 – 11.00: Coffee break

Surface treatments

11.00 -11.20 Study on the Application of Anti-Graffiti Systems on Natural Stones and Concrete

U. Mueller, K. Malaga, A. Gardei, Federal Institute for Materials Research and Testing, Berlin, Germany – Swedish Cement and Concrete Research Institute, Borås, Sweden

11.20 – 11.40 Use of Technical Textile to Obtain Sustainable Easy to Clean Concrete Surface

K. Malaga, A. Lundahl, M. A. Kargol
Swedish Cement and Concrete Research Institute, Borås, Sweden – Federal Institute for Materials Research and Testing, Berlin, Germany – Danish Technological Institute, Gregersensvej, Denmark

Case studies and standards

11.40 – 12.00 Hydrophobicity – one target, several possibilities. Discussion of four case studies under the focus of Venice Charter

G. Hilbert, E. Wendler, Remmers Fachplanung GmbH, Lönningen, Germany – Fachlabor für Konservierungsfragen, München, Germany

12.00 – 12.20 Use of a silicone-based hydrophobic treatment in porous ceramic floor tiles: a case-study in Portugal.

T. Diaz Gonçalves – Laboratório Nacional de Engenharia Civil (LNEC), Lisboa, Portugal

12.20 – 12.40 Brick-wall masonry decay patterns and in situ evaluation of effectiveness of treatments of Torre Alberaria in Venice

V. Fassina, M. Favaro, D. Melica - Sovrintendenza Beni Storici, Artistici ed Etnoantropologici, Venice, CNR- Istituto Chimica Organica delle superfici (ICIS), Padova and Istituto Veneto per i Beni Culturali, Venice Italy

12.40 – 13.00 Laboratory test assessment of the effectiveness of treatments applied on brick-wall masonry: the case of Torre Alberaria in Venice

V. Fassina, M. Favaro, D Melica - Sovrintendenza Beni Storici, Artistici ed Etnoantropologici, Venice, CNR- Istituto Chimica Organica delle superfici (ICIS), Padova and Istituto Veneto per i Beni Culturali, Venice Italy

13.00 – 14.30 : Lunch

Afternoon

14.30 – 14.45 Update of the activity of CEN TC 346-Conservation of cultural property-after a six year period *Vasco Fassina*

14.45 - 15.00 Invited speaker presentation

15.00 - 16.00 Group discussion / New proposals /Announcements

16.00 : Conference Closure

Conference venue:

Reale Accademia di Spagna , Piazza S. Pietro in Montorio – 00152 Rome Italy

Scientific Committee 2011

Ernesto Borrelli , Api Elena Charola , Hilde De Clercq , Vasco Fassina , Thomas Gebhart , Heinz Geich , Andreas Gerdes , Klaus Littmann , Luc Schuere mans , Johan Silfwerbrand , Yves Vanhelle mont , Folker H. Wittmann , Zhao Tie-Jun ,	Istituto Sup. per la Conservazione ed il Restauro, Rome, Italy Buenos Aires, Argentina KIK-IRPA, Brussels, Belgium Soprintendenza Beni Artistici del Veneto, Venezia, Italy Sto AG, MAT-C-Technik Ausland, Germany Wacker Chemie AG, München, Germany Hochschule Karlsruhe, Karlsruhe, Germany University of Hannover, Hannover, Germany Katholieke Universiteit Leuven, Leuven, Belgium CBI, Stockholm, Sweden Belgian Building Research Institute, Limelette, Belgium Aedificat Inst Freiburg, Freiburg im Breisgau, Germany Qingdao Technological University, Qingdao, China
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