



'Waterproofing & Drainage'

23 – 24 September 2015

**Venue: VersuchsStollen Hagerbach AG
Polistrasse 1 - 8893 Flums Hochwiese
Switzerland**

Objective: In the scope of the DEMINAR Waterproofing and Drainage Hagerbach Test Gallery LTd & ITA-CET (Committee on education & Training of International Tunneling Association) have invited experts, who highlight the topic of Waterproofing & Drainage from different perspectives. This comprises general considerations which aspects have to be taken into account for a comprehensive Waterproofing & drainage concept. Case studies illustrated long term experiences & the use of different sealing methods. Next to the focus a sealing issue also questions concerning drainage of water will be addressed with special focus on sustainability.

At the Deminar, a combination of **DEMonstration** & **SemINAR**, first the theoretical background for Waterproofing & Drainage will be illustrated. Experienced specialists will present the topic from different points of view. Within practical Demonstration possible solutions will be presented in a 1:1 scale.

Preliminary programme

Wednesday 23 September 2015

- 09:00 – 09:30: Welcome & Opening – J. Baber (ITA WG11 Animateur)
- 09:30 – 10:00: General aspects of waterproofing in tunnels – J. Baber
- 10:00 – 10:30: Sealing concepts for tunnels with high overburden – Y. Boissonnas (Amberg Engineering, CH - Zürich)
- 10:30 – 11:00: Coffee break
- 11:00 – 11:30: Experiences with single shall lining in tunnels – P. Loser(Rhätisch Bahn, CH - Chur)
- 11:30 – 12:00: Experiences with different type of sealing at the cross rail project – M. King (Crossrail, GB – London)
- 12:00 – 13:30: Lunch break
- 13:30 – 15:00: Demonstrations with Drainage protection systems, spray applied membranes, testing of systems
- 15:00 – 15:30: Requirements for sealing systems in tunnels – Prof. Heimbecher (University Münster - Germany)
- 15:30 – 16:00: Combination of different sealing systems applied at the emergency tunnel "Lötschberg" – Dr. Ing. V. Reinstadler (Mapei, CH – Sorens)



- 16:00 – 16:30: ITAtch Design guidance for spray Applied Waterproofing Membranes – R. Dimmock (Chairman ITAtch, GB)
- 16:30 – 17:00: Bentonit for sealing of tunnels – A. Pflieger(BPA, Germany - Herenberg)
- 17:00 – 17:30 Questions, Answers & Closing of day 1
- 17:30: Aperero
- 18:00: Gala-Dinner

Thursday 24 September 2015

- 08:30 – 09:00: Injection as sealing method – Experiences from Hong Kong – K. Garshol (K.G. Rock Engineering, Sweden - Uddevalla)
- 09:00 – 09:30: Water tight sprayed concrete – K. Bonin (Wacker, Germany - Burghausen)
- 09:30 – 10:00: Protection of drainage in sealing systems – S. Häusermann (BFA, CH - Lenzburg)
- 10:00 – 10:30: Coffee break
- 10:30 – 11:00: Bonded termination of sheet waterproofing on precast concrete segments as an alternative to clamped watertight connections – S. Lemke (SIKA services AG, CH - Zürich)
- 11:00 – 11:30: Properties of sprayed concrete tunnel linings with sprayed waterproofing in hard rock conditions. Main findings from research for Norwegian rail & road tunnels – K.G. Holter (NTNU, Norway - Trondheim)
- 11:30 – 12:00: Innovative sealing & drainage systems for tunnels – U. Müller (Dörken, CH - Arlesheim)
- 12:00 – 13:30: Lunch
- 13:30 – 15:00: Demonstrations with Innovative drainage systems, sheet membranes, injections
- 15:00 – 15:30: Durability of drainage systems – N. Tholl (Solutions GmbH, CH - Sarnen)
- 15:30 – 16:00: Drainpipes in tunnels – M. Rungger (ACO, CH - Gunzgen)
- 16:00 – 16:30: Prefabricated elements in drainage pipes – T. Rohr (Creabeton, CH - Rickenbach)
- 16:30 – 17:00: Closing & Farewell