

In 1979 the renowned Grouting Fundamentals & Current Practice short course was founded in the USA, and since then has provided unique professional training and education to thousands of grouting professionals worldwide. In response to industry interest, the course organizers are pleased to now offer this exceptional training opportunity in Munich, Germany. The 1st European course edition includes a faculty of 18 experts from 10 countries, providing exceptional breadth and expertise concerning grouting fundamentals and international best practices.

This unique 4-day course covers pressure grouting as a method to improve geotechnical properties of soils and rock masses, with special focus on mechanisms, theories, and practical applications of grouting to ground densification and strengthening, permeability reduction and groundwater cutoffs. The curriculum has been developed specifically for Owners, Regulators, Consultants and Contractors having interest in the applications of pressure grouting to a broad array of geo-structural construction and remediation techniques.

#### Major course topics include:

- grout rheology
- cementitious and chemical grouting procedures
- overburden and rock drilling methods
- optimizing grouting during construction
- jet grouting
- deep soil mixing
- composite seepage barriers
- compaction grouting
- rock anchors and SBMA design
- micropiles
- compensation grouting
- permeation grouting
- GIN and RTGC in rock grouting
- amenability theory
- pre-excavation grouting for rock tunnels
- concrete repair

## Location

**Bundeswehr University Munich**  
Room 2004  
Werner-Heisenberg-Weg 39  
85577 Neubiberg

## Fee

<b>Early Registration*</b>	€ 1.990
<b>Regular</b>	€ 2.390
<b>Partners</b>	€ 1.690
<b>Student</b>	€ 1.195
<b>One-Day Ticket</b>	€ 800

## Registration

Register online:  
[www.grouting-fundamentals.com](http://www.grouting-fundamentals.com)

## Contact

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\*For further information,  
visit the event website.

This professional training event is organized by the Institute of Applied Geosciences at the Graz University of Technology together with the publishing house Ernst & Sohn, and in cooperation with the Institute of Soil Mechanics and Foundation Engineering at the Bundeswehr University in Munich.



# Grouting Fundamentals & Current Practice

**40th Annual Short Course  
1st European Edition**

**16.-19. September 2019 • Munich**



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[www.grouting-fundamentals.com](http://www.grouting-fundamentals.com)

## Monday (16.9.)

### Material Properties and Applications

- 8:00–8:10 **Welcome/Opening Remarks**  
Dean and Professor Dr. Thomas Apel –  
Bundeswehr University Munich (D)  
Dr. Scott Kieffer – TU Graz (A)
- 8:10–9:40 **Introduction and Overview**  
Clif Kettle – Clif Kettle Consulting (UK)
- 9:50–10:50 **Grout Types and Rheology**  
Christophe Justino – Soletanche Bachy (F)
- 11:00–12:00 **Cementitious Grout Materials  
& Mix Design**  
Christophe Justino – Soletanche Bachy (F)  
**Lunch Break**
- 13:00–14:00 **Chemical Grouting Basics and  
Applications in Underground  
Construction**  
Dr. Robert Penczek – DSI Underground (P)
- 14:10–15:10 **Traditional Geotechnical Applications  
of Chemical Grouting**  
Götz Tintelnot – TPH Waterproofing  
Systems (D)
- 15:20–16:10 **Chemical Grouting for Concrete Repair  
and Rehabilitation**  
Haktan Sahin – Sika AG (CH)
- 16:20–17:00 **Penetrability of Silicate and Acrylate  
Gels: New Approaches & Design Concepts**  
Dr. Conrad Boley, Yashar Forouzandeh,  
Paul Pratter, Simone Wagner –  
Bundeswehr University Munich (D)
- 18:00–21:00 **Icebreaker Reception**

## Tuesday (17.9.)

### Rock Grouting

- 8:30–9:20 **Tools for Optimizing Rock Mass Grouting**  
Dr. Scott Kieffer – TU Graz (A)
- 9:30–10:50 **Cement Grouting in Rock –  
Overview and Applications**  
Trent Dreese – Gannett Fleming (USA)
- 11:00–12:00 **The GIN Concept of Rock Grouting**  
Maren Katterbach –  
Lombardi Engineering (CH)  
**Lunch Break**
- 13:00–13:50 **Real Time Grouting Control (RTGC)**  
Mikael Creutz – Golder AB (S)
- 14:00–14:50 **Dam Remediation: North American  
Case Histories**  
Trent Dreese – Gannett Fleming (USA)
- 15:00–15:50 **Rock Anchors for Dams**  
Dr. Donald Bruce – Geosystems L.P. (USA)
- 16:00–17:00 **High Capacity Anchors in Soils  
& Weak Rock (SBMA)**  
Dr. Devon Mothersille – SBMA/Geoserve  
Global (UK)

## Wednesday (18.9.)

### Drilling, Specialty Construction Methods

- 8:00–8:45 **Evolution of Small Hole Drilling Methods**  
Dr. Donald Bruce – Geosystems L.P. (USA)
- 8:55–9:40 **Micropiles**  
Dr. Donald Bruce – Geosystems L.P. (USA)
- 9:50–10:35 **Deep Soil Mixing**  
Clemens Kummerer – Keller Grundbau (D)
- 10:45–11:30 **Composite Seepage Barriers**  
Dr. Donald Bruce – Geosystems L.P. (USA)
- 11:40–12:25 **Mosul Dam: Remedial Measures  
and Outlook**  
Raffaella Granata – Trevi S.p.A. (I)
- 12:30–17:00 **Hands-On Demonstration of  
Grout Materials and Equipment**

## Thursday (19.9.)

### Soil Grouting, Tunnels

- 8:00–9:30 **Limited Mobility Grouting**  
Joe Harris – Hayward Baker (USA)
- 9:40–11:00 **Permeation Grouting of Soils**  
Clif Kettle – Clif Kettle Consulting (UK)
- 11:10–12:30 **Compensation Grouting**  
Clif Kettle – Clif Kettle Consulting (UK)  
**Lunch Break**
- 13:30–14:50 **Jet Grouting**  
Wolfgang Kühner – Keller Grundbau (D)
- 15:00–16:00 **Pre-Excavation Grouting  
in Rock Tunnels**  
Hans-Olav Hognestad – Mapei UTT (N)
- 16:10–17:00 **Post-Excavation Grouting  
in Underground Construction**  
Helmut Wannenmacher –  
Implenia Austria (A)