



# Von Roll Insulation Training and Coaching Program 2020



**VonRoll** Institute  
for High-Voltage Insulation



As one of the oldest industrial companies in Switzerland, founded in 1803, we focus on products and systems for power generation, transmission and distribution, rotating machines and mechanical engineering. Von Roll is the global market leader for insulation products and the only company to offer the complete range of insulation products, composites, consulting, tests and services for electrical machines such as turbo and hydro generators:



## Mica

Mica is a base material for high-voltage insulation. Von Roll's commitment to mica is extensive and covers all stages in the manufacturing process.



## Wires

Insulated round, flat and litz wires for high- and low-voltage markets and electronic applications.



## Cables

Mica tapes for fire-resistant cables. Von Roll provides a wide range of products that are ideally suited to all commonly used standards.



## Resins

Impregnation and potting resins as well as encapsulating and conformal coatings for high- and low-voltage applications.



## Flexibles

Insulating flexible materials suited for low-voltage applications such as flexible laminates.



## Composites

Engineered materials made from a resin and a support structure with distinct physical, thermal and electrical properties. They can be molded, machined or semi-finished.



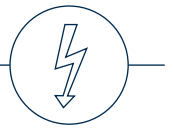
## Testing

Von Roll provides electrical, thermal and mechanical testing of individual materials as well as complete insulating systems in accordance with UL and IEC standards.

The insulation training and coaching program focuses on insulation for high-voltage electrical rotating machines. The program has become increasingly popular and is now open to everyone involved in insulation technology for rotating machines and wanting to remain up to date.

As an added benefit, during the training expert coaches are available to answer specific questions from individual participants.

# Low-Voltage Training (incl. eDrive)



**Location:** Trofarello, Italy  
**Dates:** June 8–10, 2020  
**Language:** English  
**Fee:** EUR 1,900 excl. VAT  
including meals and accommodation

This training session provides a detailed overview of insulating materials and systems for low-voltage rotating machines, including selection, processing and testing. The training includes three days of classroom learning and hands-on activities ideally suited for production and design engineers, R&D staff, repair specialists, end users and other technical staff who require more thorough knowledge of these insulation systems.

## Training content

This training takes place at our center of excellence for liquids in Trofarello, in the Torino region of Italy, and includes the following topics:

- » Introduction and fundamentals
- » Winding wires
- » Flexible insulation
- » Electrical adhesive materials
- » Banding tapes
- » Impregnation resins and varnishes
- » Potting and encapsulating compounds
- » Component and systems testing (UL focus)
- » Customer acceptance testing
- » Stresses in inverter-driven drives



# Basic High-Voltage Training



Meet our experts in person and take a look around our facilities in Switzerland.

**Location:** Breitenbach, Switzerland  
**Dates:** third Thursday of each month  
**Language:** English or German (alternating)  
**Fee:** CHF 299 excl. VAT

## Training content

- » Introduction to operations at the Von Roll Institute
- » Basic training in high-voltage insulation materials
- » Current trends and fields of research
- » Laboratory visit
- » Practical demonstration of high-voltage tests

# Advanced High-Voltage Training



**Locations:** Breitenbach, Switzerland  
**Dates:** March 16–19, 2020  
October 19–22, 2020  
**Language:** English  
**Fee:** CHF 3,500 excl. VAT  
including meals and accommodation

The target audience for this training is technicians, engineers and managers who wish to gain deeper insight into and exchange ideas on insulation technology and materials. Participants benefit from a basic knowledge of electrical engineering, physics and chemistry, although this is not required. The number of participants is limited to twelve to ensure quality interaction.



## Training content

The Advanced High-Voltage Training includes the following topics:

### 1. General knowledge

- » Basics of motors and generators
- » Mica and mica paper
- » Insulation materials and their evaluation

### 2. Insulation technology

- » Resins and varnishes, impregnation techniques
- » Resin-rich and VPI technology, theory and practice
- » Suppression of partial discharge
- » Winding wires
- » Composite materials
- » Processing equipment and technology
- » Testing of sample coils

### 3. Insulation systems

- » High-voltage motors
- » Large power generators
- » Traction motors
- » Wind-turbine generators

### 4. Factory visits and application exercises

- » Flexible materials and liquids
- » Winding wires
- » Composite materials
- » Applications laboratory
- » High-voltage laboratory

## Expert High-Voltage Training



<b>Location:</b>	Breitenbach, Switzerland
<b>Dates:</b>	April 6–8, 2020 November 16–18, 2020
<b>Language:</b>	English
<b>Fee:</b>	CHF 4,500 excl. VAT including meals and accommodation

For those with an extensive knowledge of insulation technology, we offer a three-day advanced training with the possibility of excursions to other facilities. In this training, we focus even more on discussion and practical work. The number is limited to eight participants due to the interactive nature of the program. We ask you to inform us in advance about your questions and topics of interest, so that we can better prepare and ensure the appropriate experts will be available to you.

## Training content

- » Different insulation technologies and an introduction to the latest developments in insulation tools
- » Insulation systems in typical high-voltage uses such as turbo and hydro generators, industrial plants, electric cars and drivetrains
- » Run-through of different example case studies in workshops and practical tests
- » Visit to the factory and laboratories in the region

# Contact

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Please contact us for further details and information.  
The training organizers may be reached directly at:  
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