



**SIEMENS**

*Ingegno per la vita*



LABORATORIO  
**SVEPPI**

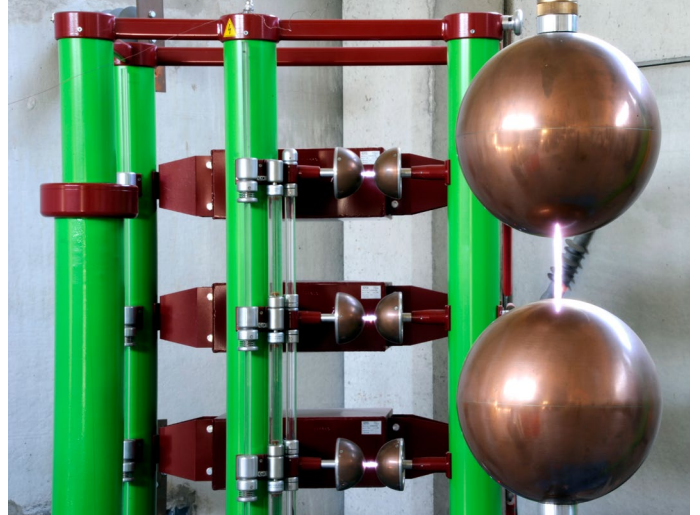
**SVEPPI Laboratory**

Energy Management Customer Service - Italy

[www.siemens.it/serviceT&D](http://www.siemens.it/serviceT&D)

## Our service activities for your success

Experience teaches us that experimental activities are very important and necessary every time the electric phenomena are complex and the choices related to the project seem to be very difficult. It is convenient for the electric equipment to be tested in different conditions according to the international standards, to check not only the electric, dielectric, thermal and mechanic performance but also the performance related to safety and life cycle. The compliance to IEC/EU Standards is an essential requirement and we are able to guarantee it. A higher reliability and a longer life time of products can open the way to the success. Siemens, thanks to the SVEPPI laboratory and related test capabilities allows you to carry out several kinds of electrical and mechanical tests. The tests are carried out according to main technical standards. Built in the early 50ies it is located closed to Terna Substation of Scorzè and connected with a dedicated 220 KV bay.



Area: 16000 m<sup>2</sup>

Short circuit power: 3 x 500 MVA

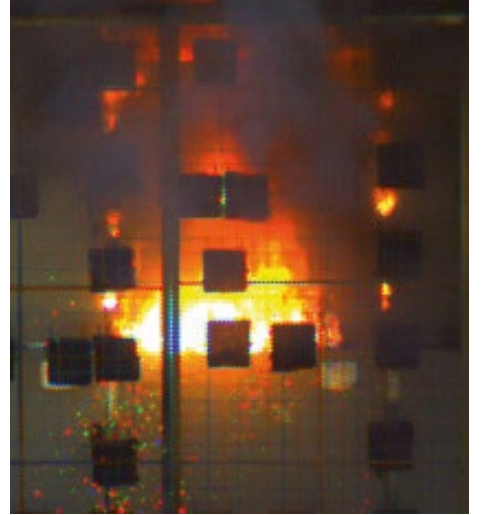
Test capability	Maximum Ratings
CB MV – HV	Up to 550 kV – 50 kA
DS MV - HV	Up to 550 kV – 63 kA
Transformers MV	Up to 15 MVA
Switchboards	Up to 52 kV
CT/VT MV - HV	Up to 800 kV 80/210 Ka/ Kap
Switches	Up to 36 kV – 800 A
Insulator for overheads lines	Up to 550 kV – 50 kA
Accesories for power MV cables	Up to 245 kV – 36 kV
Post insulator	Up to 550 kV
Reactors LV-MV	Up to 50 kA
Bushings	Up to 245 kV 80/210 ka/kAp

- The above list isn't fully exhaustive of the kind of apparatus that can be tested, nor of the variety of tests which can be carried out
- Feasibility of each single test should however be requested to the laboratory for confirmation
- For any IEC standard referred test, the corresponding test feasibility is CEI EN related standard is provided



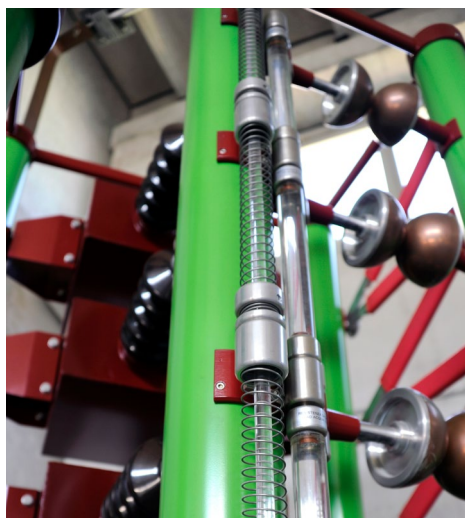
# Power tests

Plant of 1500 MVA power short circuit, supplied directly from 220 kV national grid.  
 Direct test voltage range between 7 - 115 kV up to 63 kA, 130 kAp



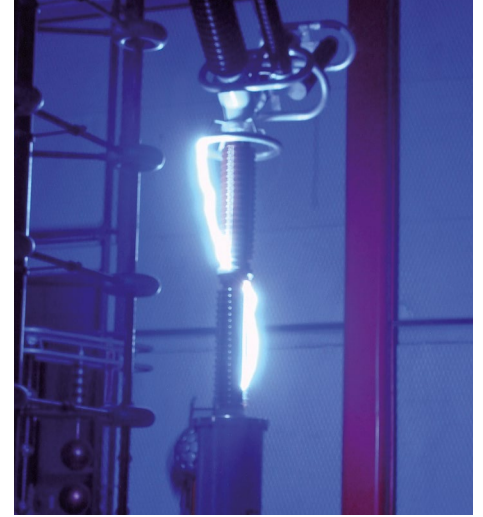
Test	Device & Standard		Device range
Making and breaking current	Circuit Breakers	Standard IEC 62271 - 100	Up to 24 kV 12.5 kA Up to 12 kV 20 kA
Short time withstand current and peak withstand tests.	Circuit Breakers Disconnectors AC metal enclosed Current Transformers Switches	Standard IEC 62271 - 100 Standard IEC 62271 - 102 IEC 62271 - 200 IEC 60044 - 1 IEC 62271 - 103	Single phase: up 80/210 kA/kAp 3s Three phases: up to 50 kA 1s 130 kAp
Making and breaking due to electrostatically and electromagnetically induced current	Disconnectors	IEC 62271 - 102	Up to 550 kV
Arcing due to internal fault	AC metal enclosed	IEC 62271 - 200	Up to 52 kV 50 kA
AC power arc test	Insulators for overhead lines	IEC 61467	Up to 550 kV 31.5 kA Up to 245 kV 50 kA
Ability to withstand short circuit	Power Transformer MT/BT	IEC 60076 – 5/11	Up to 15 MVA MT/BT
Making and breaking tests	Switches	IEC 62271 - 103	Up to 36 kV 800 A 12.5 kA Up to 24 kV 800 A 16kA

## Dielectric test



Test	Device and standard		Device range
Withstand power frequency test	Circuit breakers	Standard IEC 62271 – 100	Up to 36 kV
Withstand lightning impulse test (full & chopped)	Disconnectors	Standard IEC 62271 – 102	
	Current & Voltage Transformer	IEC 60044 - 1	
	Setting insulator for overhead lines	IEC 61869 – 1 IEC 61869 - 2	
Withstand power frequency test	Switchboard	IEC 62271 - 200	Up to 52 kV
Withstand lightning impulse test	Switches	IEC 62271 - 103	

## Temperature Rise, mechanical and on site tests



<p>Temperature rise test DC 50/60 Hz</p>	<p>Circuit Breakers Disconnectors Switch boards Switches Power transformer Current transformers</p>	<p>Standard IEC 62271 – 101 Standard IEC 62271 - 102 Standard IEC 62271 - 200 IEC 62271 - 103 Standard IEC 60076 – 2&amp;11 Standard IEC 61869 – 1&amp;2</p>	<p>Up to 6000 A single phase Up to 3150 A three phases</p>
<p>Mechanical test</p>	<p>Circuit Breakers Disconnectors Switches</p>	<p>Standard IEC 62271 - 101 Standard IEC 62271 - 102 Standard IEC 62271 - 200 IEC 62271 - 103</p>	<p>Up to 6000 A single phase Up to 3150 A three phases</p>
<p>On site test</p>	<ul style="list-style-type: none"> <li>• Measurement of operating times of circuit breakers and disconnecting switches in GIS or AIS installations</li> <li>• Measurement of the resistance of the main circuit.</li> <li>• Dielectric tests on auxiliary and control circuits.</li> <li>• SF6 tightness tests</li> <li>• Measurement of the moisture content for SF6</li> <li>• Measurement of transformation ratio for instrument transformers and power transformers</li> <li>• Tests on protection relays (excluding distance protection)</li> <li>• Measurement of inductance for line traps and power transformers</li> <li>• Measurement of capacitance</li> <li>• Measurement of dielectric dissipation factor</li> <li>• Thermography</li> <li>• Leakage current measuring for surge arresters</li> </ul>		



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