



**IEC SYSTEM FOR CONFIRMITY  
TESTING AND CERTIFICATION  
OF ELECTRICAL EQUIPMENT**

**COMMITTEE OF TESTING LABORATORIES**

**IEC 61558-1, ED. 2 (2005)**  
**TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING**  
**Safety of power transformers, power supplies, reactors and similar products**  
**Part 1: General requirements and tests**

*R=Required by Lab.*

*S=May be subcontracted*

*W=Witness testing*

*3PPS=Three Phase Power Supply required*

<b>Clause</b>	<b>Measurement/testing</b>	<b>Testing / measuring equipment / material needed</b>	<b>Subcontracting</b>
8.15	Marking	Piece of cloth, water, hexane	<b>R</b>
9.1	Protection against accessibility to hazardous live parts	Standard test finger (IEC 60529), test pin according to Figure 3, multimeter, oscilloscope / Measuring network (Annex J)	<b>R</b>
11.1 / 12 / 13	Output voltage and output current under load measures / No-load output voltage measures / Short-circuit voltage test	Power supply, multimeter, amperometer, wattmeter	<b>R</b>



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14.2/ 14.3 15.2 / 15.3 15.4 / 15.5	Heating test / Short circuit and overload protection test / Short circuit and overload protection test for fail safe transformers	Power supply, impedances, ohmmeter, thermocouples, thermometer, amperometer, oven without air circulation if $t_a > 25^\circ\text{C}$ , black wooden painted support, pull test device (N), copper discs painted black with thermocouples, electric strength test equipment, fuse link	<b>R</b>
14.3.2	Vibration test	Vibration generator (IEC 60068-2-6 refers)	<b>S</b>
16.2 / 16.3 16.4	Mechanical strength tests	Spring hammer, steel plate, tumbling barrel, dynamometer and torque meter, calipers, weighing device (g) pull test device (N)	<b>R</b>
17.1	- Protection against ingress of solid objects - Protection against ingress of dust and water	- IP3X (2,5mm probe), IP4X (1mm probe) - Dust chamber (IP 5X and IP 6X) - Apparatus for protection against water tests	<b>R</b> <b>R</b>
17.2	Humidity test	Humidity cabinet	<b>R</b>
18.2	Insulation resistance tests	Megaohmmeter	<b>R</b>
18.3	Dielectric strength tests	High voltage transformer	<b>R</b>
18.4	Higher frequency test	Frequency converter	<b>R</b>
19.2	Fiercely burning materials	Glow wire test apparatus	<b>R</b>
19.9	Ageing properties of rubber	Test apparatus for rubber parts in oxygen under pressure	<b>S</b>
19.10	Ageing test / Impact test / Scratch test	Heating cabinet / Spring hammer / Hardened steel pin	<b>R</b>
19.12.3	Insulated winding wires construction (according to IEC 60851-3/5/6)	Heating cabinet, high voltage transformer, mandrels	<b>S</b>



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19.15	Strain test on socket-outlets	Apparatus for torque measuring on socket	<b>R</b>
20.5 / 20.5.3	Thermal cut-out tests (based on IEC 60730-1) Tests on PTC resistor	Power supply (cycled), heating cabinet	<b>R</b>
22.9.4	Protection against excessive flexing of cords	Flexing test apparatus	<b>R</b>
22.9.5 / 23.2 23.4	Cord anchorage test / Pull test for terminals / Terminals contact pressure	Torque meter / Dynamometer, test cables of various sizes	<b>R</b>
24.4	Protective earthing test	Earthing test equipment	<b>R</b>
25	Screws and connections (mechanical) and glands testing	Screwdriver or spanner, test rod	<b>R</b>
26.2	Creepage and clearance distances	Sliding caliper / Thickness caliper / Climatic chamber	<b>R</b>
26.3	Distances through insulation	Mandrel apparatus	<b>R</b>
27.1 / 27.2 27.4	Resistance to heat / fire tests	Heating cabinet / Glow wire test apparatus / Ball pressure test apparatus (see also CTL D.S. N. 391.mod)	<b>R</b>
27.3	Resistance to ignition testing	Power supply, fuses, impedances, black painted wooden support	<b>R</b>
27.5	Resistance to tracking test	Proof tracking test device	<b>R</b>
28	Resistance to rusting	Closeable glass vessel / Test solution / Heating cabinet / Facilities to wash samples after test	<b>R</b>