



IEC 60950 3<sup>rd</sup> ED. (1999-04)

**TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING (revised 2006-06-01)**

R=Required by Lab S=May be subcontracted

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
1.6.2	Input current	Amp-meter suitable for the current and waveform	R
1.7.13	Durability	Petroleum spirit/water/piece of cloth.	R
2.1.1.1	Protection in operator access areas	Test finger (joint /rigid 30N, fig. 2A)	R
		Test pin (fig. 2B/ 4mm/3mm/15 mm long)	R
		Test probe (Fig. 2C, 12mm/80mm)	R
2.3.1	Limits of TNV circuits	Resistor 5000Ω± 2%	R
2.3.3	Separation from hazardous voltage	Resistor 5000Ω± 2%	R
2.3.5	Test for operating voltages generated externally	Test generator (120V□ 2Va.c., 50 or 60 Hz, 1200Ω± 2%)	R S: only if telecom products are excluded
2.4.2	Limited current determination	Resistor 2 000 Ω± 10%,	R
2.6.3.3	Resistance of earthing conductors	> 25 A / < 12V < 0,1 Ω	R
2.9.2	Humidity conditioning	Chamber (91% Rh...95% Rh, 20...30 } C)	R
2.10	Creepage/clearance/distance through insulation (determination of requirements; working voltage measurements)	Oscilloscope	R
	Creepage/clearance/distance through insulation (measurements)	Dial gauge	R
		Micrometer	R
		Pins etc. with different diameters	R
		Microscope	R
2.10.3.4	Measurement of transient levels	Test-generator acc. Annex N	R
2.10.4	Creepage distances	Test equipment for tracking index	S
2.10.6.3 and	Thermal cycling and thermal ageing	Full draught oven (± 2°C)	S

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2.10.6.4		Cooling facility (0° C)	
2.10.6.6	Abrasion resistance test	Scratch test device with steel pin	S
2.10.7	Enclosed and sealed parts	See 2.10.6.3 and 2.10.6.4	S*
3.2.6	Cord anchorage and strain relief	Appropriate weights	R
3.2.8	Cord guards	See 3.2.6	R
4.1.	Stability	Inclined plane 10°	R
		Force 250N/ 800N(Flat surface 12,5cm by 20cm)	R
4.2.3	Steady force test 30 N	Test finger (rigid 30N± 3N, fig. 2A)	R
4.2.4	Steady state force, 250 N	250N± 10N( 30mm circular plane)	R
4.2.5	Impact test	50mm/500g± 25g steel ball	R
4.2.6	Drop test	Hard wood 13mm on 19mm to 20mm plywood, two layers.	R
4.2.7	Stress relief	Oven 70K over normal temp.	R
4.2.8	Cathode ray tube	Test equipment acc. IEC 60065	S
4.2.10	Wall or ceiling mounted equipment	Several weights	R
4.3.2	Handles and manual controls	Force 15N/20N/30N/50N	R
4.3.6	Direct plug-in equipment	Test equipment (see Fig. 11 of IEC 60065)	R
4.3.12	Flammable liquids	Measuring equipment for concentration of flammable vapours	S
4.3.13	Ionizing radiation	Ionization meter (Annex H)	S
	laser radiation	Several special equipment for laser classification(IEC 60825-1)	S
4.4	Protection against hazardous moving parts	Test finger (joint /rigid 30N, fig. 2A)	R
4.5	Thermal requirements		R
	Voltage supply	Voltage supply systems/variability/adequacy	R
	Temperature (rise)	Temperature recorder (multi-channel)	R
		Thermocouples	R
		Winding resistance (normally > 1,0 Ω 2-wire, 4-wire <1,0 Ω ).	R
	Voltage	Voltmeters (ac/dc)	R
		High voltage meter (probe)	R
	Current	Currents (ac/dc)	R
	Loading	Loads (resistive)	R



2006-06-01 2/3 4.5.2	Resistance to abnormal heat	Ball pressure test apparatus (Fig 21, 2 <sup>nd</sup> ed. or IEC 60695-10-2) Oven at least 125°C	R
4.6.5	Adhesives for constructional purposes	Oven up to 100 } C	R
4.7.3	Materials, Tests see Annex A	V-1, V-2, HF-2, 5V	R
		Bunsen burner (9,5 □ 0,5 mm)	R
		Gas for burner (~37 MJ/m <sup>3</sup> )	R
		Oven for preconditioning	R
		High current arcing	S
		Hot wire ignition	R
4.7.3.6	Materials used in high-voltage components	Test of Annex A or test of 14.4 of IEC 60065	R
5.1	Touch current and protective conductor current	Measuring instruments of Annex D	R
5.2	Electric strength	Test equipment with the relevant voltage and dripping current.	R
6.2	Protection of equipment users from overvoltages on telecommunication networks		R
6.2.1		Test probe (Fig. 2C, 12mm/80mm)	R
6.2.2.1	Impulse Test	Impulse test generator according to Annex N	R
6.2.2.3		insulation resistance (500 V dc > 2 MΩ )	R

Note: The presence of equipment alone does not indicate a satisfactory situation. Assessors must evaluate the equipment design, calibration, uncertainty and documentation to ensure compliance with the directions of the standard. The requirements of ISO Guide 25 regarding validation are applicable, as the tests of this standard are not standardised tests.

Items with \* were changed in revised version because of errors in first version

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