



TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING
Hand-held motor-operated electric tools – Safety - General requirements
IEC 61029-1 1st Edition (1990)

R=Required by Lab

S=May be subcontracted

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
7	Marking	Petroleum Spirit	R
8	Protection against access to live parts	Test fingers, Test pin, Voltmeter, Milliammeter, Force gouges	R
10	Input and current	Voltmeter, Ammeter, Wattmeter, Loading as required by part 2's, Device to measure output torque as specified in part 2's	R
11	Heating	Variable voltage source ,Temperature Recorder, Fine wire thermocouples	R
		Winding resistance measurement system, Loading as required by part 2's, Device to measure output torque as specified in part 2's	R
12	Leakage current	Leakage current meter, Isolation transformer	R
13	Radio and television interference suppression	As required by part 2s	S
14	Protection against ingress of foreign bodies and moisture resistance	IP apparatus in accordance with IEC 60529	R
		Environmental chamber capable between 91 and 95 %RH at selected temp. with HV test facilities	R
15	Insulation resistance and electric strength	Instrument for measuring of the insulation resistance and HV-test facilities	R
16	Endurance	Timer(100s ON, 20s OFF)	R
17	Abnormal operation	Variable voltage source ,Temperature Recorder	R
		Winding resistance measurement system	R
18	Stability and mechanical hazards	Plane inclined	R
19	Mechanical strength	Impact hammer, Torque screwdriver	R
20	Construction	Oxygen bomb	S
22	Components	Laboratory may or may not have facilities for testing to component standards.	S
23	Supply connection and external flexible cords	Flexing test apparatus, dynamometer, torque screwdriver	R
24	Terminals for external conductors	Torque screwdriver	R
25	Provision for earthing	Earth continuity tester	R
26	Screws and connections	Torque screwdriver	R
27	Creepage distances, clearances and distance	Mechanical measurement tools, Rod and ball gauges	R



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	through insulation		
28	Resistance to heat, fire and tracking	Ball Pressure test apparatus, hot mandrel apparatus, tracking test apparatus	R
29	Resistance to rusting	10 % ammonium chloride	R
Annex IA	Circuit for measuring leakage currents	Meter as specified	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/IEC 17025 regarding validation are applicable, as the tests of this standard are not standardized tests.