



TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING
Hand-held motor-operated electric tools – Safety - General requirements
IEC 60745-1 4st Edition (2006)

R=Required by Lab

S=May be subcontracted

Clause	Measurement/testing	Testing / measuring equipment / material needed	LISUN Model	Subcontracting
4	General requirement	None		
5	General conditions for the tests	None		
6	Void			
7	Classification	None		
8	Marking and instructions	8.1 IP number according to degree of protection against ingress of water	JL-X	R
9	Protection against access to live parts	Test fingers, Probe, Pin, Voltmeter, Milliammeter, Force gouges	SMT-PB SMT-1213	R
10	Starting of motor-operated appliances	Nothing Special		
11	Power 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
12	Heating	Variable voltage source, Temperature Recorder, Fine wire thermocouples, Test corners, Winding resistance measurement system, Loading as required by part 2's, Device to measure output torque as specified in part 2's	WS-1	R
13	Leakage current	Leakage current meter, Isolation transformer		R
14	Moisture resistance	IPX1-7 apparatus in accordance with IEC 60529 Environmental chamber capable of 93%RH at selected temp. with HV test facilities	GDJS-015B	R
15	Electrical strength	HV-test facilities	SG61000-5	R
16	Overload protection of transformer and associated circuits	Slide resistors(variable load)		R
17	Endurance	Timer(100s ON, 20s OFF)		R
18	Abnormal operation	Fine wire thermocouples,		R
19	Mechanical hazards	Nothing special		
20	Mechanical strength	Impact hammer, Torque screwdriver, Concrete floor	IK01-06	R
21	Construction	Test rig for torque on pin supported appliance, Force gauge, steel ball 6 mm	JL-X SMT-PB SMT-IP10T	R



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22	Internal wiring	Nothing special		
23	Components	Laboratory may or may not have facilities for testing to component standards.	ITEU-SP4K CZKS-3	S
24	Supply connection and external flexible cords	Flexing test apparatus	WDT-B42	R
25	Terminals for external conductors	Nothing special		
26	Provision for earthing	Earth continuity tester, Access to ISO2178 and 1463 testing		R
27	Screws and connections	Torque gauge		R
28	Creepage distances, clearances and distance through insulation	Mechanical measurement tools, Rod and ball gauges	CK-1	R
29	Resistance to heat fire and tracking	Ball Pressure test apparatus	ZBP-T GW-500 ZRS-3H ZY-3 TTC-1	R
30	Resistance to rusting	10 % ammonium chloride	YWX/Q-010	R
31	Radiation, toxicity and similar hazards	Part 2 requirements		S
Annex A	Measurement of creepage distance and clearances	Nothing special		
Annex B	Motors <42 volts not isolated from the supply mains and having basic insulation not designed for the rated voltage of the tool	Nothing special		
Annex C	Circuit for measuring leakage currents	Meter as specified		R
Annex D	Burning test	Burning test apparatus (IEC 60707)		R
Annex E	Glow wire test	Glow wire test apparatus	ZRS-3H	R
Annex F	Needle-flame test	Needle-flame test apparatus (IEC 60695-2-2)	ZY-3	R
Annex G	Proof tracking test	Proof tracking test apparatus (IEC 60112)	TTC-1	R
Annex H	Void			



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Annex I	Switches	Endurance test apparatus (IEC 61058-1)	GDJS-015B	S
Annex J	Selection and sequence of the tests of clause 29	None		
Annex K	Battery tools and battery pack	Heating	WS-1	
Annex L	Battery tools and battery packs provided with mains connection or non-isolated sources	Nothing special		
Annex M	Safety of working stands for operation with hand-held motor-operated electric tools	Nothing special		

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.