



TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING

Household and similar electrical appliances – General requirements

IEC60335-1 3. Edition (1991) + Am.1 (1994) + Am.2 (1999)

R=Required by Lab

S=May be subcontracted

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
3	General requirement	None	
4	General conditions for the tests	None	
5	Void		
6	Classification	None	
7	Marking and instructions	Spirit, Water	R
8	Protection against access to live parts	Test fingers, probe, pin, voltmeter mill ammeter, force gauges	R
9	Starting of motor-operated appliances	None	
10	Power input and current	Voltmeter, ammeter, wattmeter	R
11	Heating	Temperature Recorder, fine wire thermocouples, test corners, Winding resistance measurement system, Loading as required by part 2's	R
12	Void		
13	Leakage current and electric strength at operating temperature	Leakage current meter, isolation transformer, HV test supply	
14	Void		
15	Moisture resistance	Oscillating hoop IP test equipment, measurement beaker, splay nozzle which are only requested as specified in Part 2	R
16	Leakage current and electric strength	Environmental chamber capable of 93%RH at selected temp. with HV test facilities	R
17	Overload protection of transformers and associated circuits	Included above	
18	Endurance	As required by part 2's	R if assessed
19	Abnormal operation	As above with suitable protection against damage to equipment, personnel and property in event of abnormal failure	R
20	Stability and mechanical hazards	Inclined plains, masses, force gauges	R
21	Mechanical strength	Impact hammer	R
22	Construction	Test rig for torque on pin supported appliance, Force gauge, Test finger nail Oxygen bomb, Cord reel test apparatus	R R S

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
23	Internal wiring	Flexing test apparatus	R
24	Components	Laboratory may or may not have facilities for testing to component standards. Certification by specialist laboratories is accepted for compliance	S
25	Supply connection and external flexible cords	Flexing test apparatus, Cord anchorage force & torque tester	R
26	Terminals for external conductors	Torque screwdriver	R
27	Provision for earthing	Earth continuity tester, access to ISO2178 and 1463 testing	R
28	Screws and connections	Torque gauge	R
29	Creepage distances, clearances and distance through insulation	Mechanical measurement tools, Rod and ball gauges	R
30	Resistance to heat fire and tracking	Ball Pressure test apparatus, Glow wire & Needle flame test apparatus, Proof tracking test apparatus, Bad connections test apparatus as alternative to GW. apparatus for low power circuit determination.	R
31	Resistance to rusting	Part2 requirements	
32	Radiation, toxicity and similar hazards	Part2 requirements	
Annex A	Normative References	Access to copies of listed standards	R
Annex B	Appliances Powered by rechargeable batteries	Free fall test apparatus (IEC68-2-32)	R
Annex C	Ageing Test on Motors	Nothing special	
Annex D	Alternative requirements for protected motor units	Nothing special	
Annex E	Measurement of Creepage distances and clearances	Nothing special	
Annex F	Motors not isolated from the supply mains and having basic insulation not designed for the rated voltage of the appliances	Nothing special	
Annex G	Circuit for measuring leakage current	Meter as specified	R
Annex H	Selection and sequence of Clause 30	None	
Annex J	Burning test	Burning test apparatus (IEC 60707 category FH3)	Alternative to GW. Equipments
Annex K	Glow wire test	Glow wire test apparatus (IEC 60695-2-1)	R
Annex L	Bad-connection test with heaters	Heaters for bad-connection test (IEC 60695-2-3)	Alternative to GW. Equipments
Annex M	Needle flame test	Needle flame test apparatus (IEC 60695-2-2)	R
Annex N	Proof tracking test	Proof tracking test apparatus (IEC 60112)	R
Annex P	Tracking severity conditions	None	
Annex Q	Capacitors	Impulse voltage test apparatus, Endurance test apparatus (IEC 60384-14)	S
Annex R	Safety isolating transformers	Nothing special	
Annex S	Switches	Endurance test apparatus (61058-1)	S

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 standardized tests.