TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING

IEC 61242:1995-02, Edition 1.0

Electrical accessories - Cable reels for household and similar purposes

R=Required by Lab
S=May be subcontracted
3PPS=Three Phase Power Supply required

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
5.3	Ambient temperature	≥15°C; ≤ 35°C, in case of doubt: (20 ± 5) °C	R
7	Marking		
7.6	Marking shall be durable and legible	Piece of cotton cloth, water, petroleum spirit	R
8	Protection against electric shock		
8.1.1		Standard test finger (figure 1); F = (10 ± 1)N; electrical indicator: 40 > U < 50 V; For cable reels with elastomeric and thermoplastic materials: suitable chamber: T = (35 ± 2) °C; standard test finger: F = 75 N	R
8.1.2		Straight rigid steel wire (figure 2); F = (1 ± 0,1/0) N; electrical indicator: 40 > U < 50 V	R
9	Provision for earthing		
9.2	Corrosion	Ssee clause 26	R

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
9.7	Internal earthing circuit	Earthing test equipment: U ≤ 12 V a.c., I = 1.5 Ir (or 25 A); A-meter; V-meter; < 0,05 è	R
9.8	Internal earthing circuit (basic insulation)	Earthing test equipment: U ≤ 12 V a.c., I = 1.5 Ir (or 25 A); A-meter; V-meter; < 0,1 è	R
10	Terminals and terminations		
10.3	Terminals with screw clamping	Caliper	R
10.3.4	Corrosion of terminals	See clause 26	R
10.3.6	Screw type terminals ·	Test screwdrivers; test equipment for checking damage to conductors (figure 3)	R
10.3.7	Screw type terminals	Test screwdrivers, Dynamo meter (pull force): 30 N to 50 N	R
10.3.8	Screw type terminals	Test screwdriver	R
11	Flexible cables and their connection		
11.1.3	Maximum length of flexible cable	Appropriate meter	R
11.4	Test of cable anchorage	Test screwdrivers; Test equipment for pull force (dynamometer or weights): 60 N, 80 N; Test equipment for torque: 0,25 Nm; Caliper	R
11.5	Opening the passage of the flexible test	Test equipment for pull force (dynamometer or weights): 60 N	R
12	Construction		

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
12.1	Diameter of surface on which the flexible cable is wound	Caliper or meter	R
12.2	Accessible metal parts	See clause 17 and 24	R
12.12	Testing of cut-outs at low temperature	Chamber: T = (-10 ± 2) °C	
13	Components	Laboratories may have or may not have facilities for testing to component standards. Certification by specialist laboratories is accepted for compliance.	S
14	Resistance to ageing	Heating chamber: T = (70 ± 2) °C	R
15	Resistance to harmful ingress of water (IP protection)	Test equipment according IEC 60529 (splashing water IPX4, water jets IPX5) equipment for dielectric strength test: see clause 17.2	R
16	Resistance to humidity	Climatic chamber: relative humidity (91 to 95)% RH, T = (20 to 30)°C; quipment for dielectric strength test: see clause 2; Insulation resistance: see clause 17.1	R
17	Insulation resistance and electric strength		
17.1	Insulation resistance	Insulation tester: U = 500 V d.c, 5 Mè	R
17.2	Electric strength	High voltage test equipment: frequency 50 Hz or 60 Hz, (500 to 4000) V; Output current >200 mA; V-meter (±3%)	R
18	Normal operation		
18.2	Load test	Current source: U(no-load) < 12 V a.c., I = (6 to 16)A; A-meter; V-meter; < 0,05 è	R

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
18.3.1	Endurance (hand-operated cable reels not incorporating movable parts)	Suitable endurance testing equipment; Electric strength test equipment: see clause 17.2	R
18.3.2	Endurance (hand-operated cable reels incorporating movable parts)	Suitable endurance testing equipment Elelectric strength test equipment: see clause 17.2	R
18.3.3	Endurance (automatic cable reels)	Suitable endurance testing equipment; Electric strength test equipment: see clause 17.2	R
19	Temperature raise in normal operation		
19.2	Temperature rise	Test corner; Thermocouples (for determining rise of the surface of the walls, ceiling and floor the thermocouples are attached to the blackened copper or brass disks having diameter 15 mm and thickness 1 mm) and appropriate measuring equipment; Suitable source for establishing testing conditions (rated current, rated voltage, rated power, cos j = 1); V-meter; A-meter	R 3PPS
20	Temperature rise under overload condition		
20.1		See clause 19.2; Standard test finger: see clause 8.1.1 Electric strength test equipment: see clause 17.2 Earthing test equipment: see clause 9.7	R
20.2		See clause 19.2; Standard test finger: see clause 8.1.1; Test equipment for pull force (dynamometer or weights): 60 N, 80 N; Electric strength test equipment: see clause 17.2; Water bath	R
21	Mechanical strength		

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
21.2	Impact test	Impact test apparatus (Figure 4); Chamber: T = (-5 ± 2)°C, T = (-15 ± 2)°C	R
21.3 to 21.5	Falls, overturns	Concrete floor	R
21.7	Screw glands	Test spanner: (3,75 to 10,0) Nm	R
22	Resistance to heat	Heating chamber; Standard test finger; Ball-pressure apparatus (Figure 5); Caliper or microscope	R
23	Screws	Current-carrying parts and connections	
23.1	Mechanical stress of screws	Test screwdrivers	R
23.5	Current-carrying parts	Chemical analysis (if necessary)	S
24	Creepage distances clearances and distances	Through sealing compound; Caliper; Test finger	R
25	Resistance of insulating materials to abnormal heat, to fire and to tracking		R
25.1	Resistance to heat and fire	Glow-wire test apparatus according IEC 695-2-1	R
25.2	Resistance to tracking	Proof tracking test apparatus according to IEC 112	R
26	Resistance to rusting	Trichloroethane or an equivalent degreasing agent; 10% solution of ammonium chloride in water; Box with saturated moisture, T = (20 ± 5)°C; Heating chamber	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 standardized tests.