



TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING

IEC 60309-1:1999-02, Edition 4.0 + A1:2005

Plugs, socket-outlets and couplers for industrial purposes - Part 1: General requirements

R=Required by Lab

S=May be subcontracted

3PPS=Three Phase Power Supply required

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
7.6	Check of markings	Water, petroleum spirit, piece of close	R
9.1	Protection against electric shock	Figure 2: Standard test finger	R
10.2	Measurement of contact resistance	AC source, measuring instruments	R
11.2.1	Test of insertability of conductors	Figure 13: Gauges	R
11.3.1	Test of insertability of conductors	Figure 13: Gauges	R
11.3.8	Bending test	Figure 19: Test device incl. current source and measuring instruments	R
11.5.1	Mechanical test	Figure 15: Test device incl. weights and torquemeter	R
11.5.2	Pull test	Weights and torquemeter	R
11.6	Voltage drop test	Heating cabinet, current source, measuring instruments	R
11.7.1	Temperature-cycling test	Heating cabinet, current source, measuring instruments	R
11.7.2	Short-time withstand current test	Current source, measuring instruments	S
13	Resistance to ageing	Heating cabinet	R
18.2	Test of degrees of protection	Test equipment according to IEC 60529 and torquemeter	R



IEC SYSTEM FOR CONFIRMITY TESTING AND
CERTIFICATION OF ELECTRICAL EQUIPMENT

COMMITTEE OF TESTING LABORATORIES

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
18.5	Humidity treatment	Humidity chamber	R
19.2	Insulation resistance test	Insulation test equipment	R
19.3	Electric strenght test	High voltage test equipment	R
20	Breaking capacity test	Appropriate test apparatus, power source, adjustable load (resistors and inductors), measuring instruments	S 3PPS
21	Normal operation test	Appropriate test apparatus, power source, adjustable load (resistors and inductors), measuring instruments	S 3PPS
22	Temperature rise test	AC source, measuring instruments, temperature measuring device	S
23.3	Cord anchorage test	Torquemeter, test apparatus according to Fig. 6 incl. weights Apparatus for torque test	R
24.1	Cold treatment	Refrigerator	R
24.2	Impact test	Figure 7: impact test apparatus	R
24.3	Mechanical strenght test	Arrangement according to Fig. 8	R
24.4	Flexing test	Apparatus according to Fig. 9	R
24.5	Torque test at screwed glands	Appropriate test arrangement incl. metal rods	R
25.1	Torque test at screws	Torquemeter	R
26.1	Creepage distances, clearances	Caliper, appropriate gauges	R
27.2	Heat treatment	Heating cabinet	R
27.3	Ball-pressure test	Heating cabinet, apparatus according to Fig. 10, caliper	R
27.4	Glow-wire test	Test apparatus according to IEC 60695-2-10	R
27.5	Tracking test	Test apparatus according to IEC 60112	R
28	Corrosion test	Chemicals, humidity cabinet, heating cabinet	R
29	Short-circuit current withstand test	Short-circuit testing arrangement according to Fig. 16, 17, 18 incl. appropriate measuring devices	S 3PPS

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.