



**TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING**  
**IEC 62196-1:2014, Edition 3.0**  
**Plugs, socket-outlets, vehicle connectors and vehicle inlets -**  
**Conductive charging of electric vehicles -**  
**Part 1: General requirements**

“R” Required  
 “S” May be subcontracted, see OD 2012  
 “SF” Specialized Facility, see IECEE 02-2  
 “W” Witness testing in the categories “MED” and “MEAS”  
 “3PPS” Three Phase Power Supply required

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
8.8	Check of markings	Water, petroleum spirit, piece of close	R
9	Dimensions	Caliper, projector	R
10	Protection against electric shock	Figure 3: Standard test finger, electrical indicator Figure 4: Gauge A, Figure 5: Gauge B	R
12.2	Measurement of earthing contact resistance	AC source, resistance measuring instruments	R
12.3	Short-time current withstanding test of earthing contact	Current source, current measuring instruments	S
13.2	Test of insertability of conductors	Figure 6: Gauges	R
13.3.1	Rotation test	Figure 7: Rotation test equipment, weights, screw driver with torquemeter	R
13.3.2	Pull test	Weights, time meter, screw driver with torquemeter	R
14.1.3	Electrical interlock test	Pull and push instrument, continuity test instrument, oscilloscope	R
14.1.4	Mechanical interlock test	Pull and push instrument, continuity test instrument	R
14.1.5	Interlock withdraw force test	Figure 8: Apparatus for checking the withdrawal force, weights, time meter	R

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
14.1.6	Verification of the latching device	Figure 9: Apparatus for verification of the latching device, weights, time meter, continuity test instrument	R
15	Resistance to ageing	Heating cabinet	R
16.5	Permissible temperature test of touch parts	Heating cabinet, current source, current measuring instruments, temperature measuring device	R
16.8	Latch release test	Weights, length meter	R
16.15	Check of withdrawal force	Appropriate test apparatus, weights	R
17.2	Contact tubes	Gauges to measure withdrawn force, test plug, weights	R
20.2	Test of degrees of protection	test equipment up to IP 4x and IPx4 according to IEC 60529, screw driver with torquemeter, high voltage test equipment	R
		test equipment above IP 4x and IPx4 according to IEC 60529	S
20.3	Humidity treatment	Humidity chamber	R
21.2	Insulation resistance test	Insulation test equipment	R
21.3	Dielectric strenght test	High voltage test equipment	R
22	Breaking capacity test	Appropriate test apparatus, power source, adjustable load (resistors and inductors), measuring instruments, high voltage test equipment	S 3PPS
23	Normal operation test	Appropriate test apparatus, power source, adjustable load (resistors and inductors), measuring instruments, high voltage test equipment	S 3PPS
24	Temperature rise test	Current source, current measuring instruments, temperature measuring device, screw driver with torquemeter	R
25.3	Cord anchorage test	Screw driver with torquemeter, test apparatus according to Figure. 11 incl. weights, apparatus for torque test	R
26.1	Cold treatment	Refrigerator	R
26.2	Ball Impact test	Figure 12: impact test apparatus, steel ball	R
26.3	Mechanical strength test	Arrangement according to Figure 13	R
26.4	Flexing test	Apparatus according to Figure 14	R
26.5	Torque test at screwed glands	Appropriate test arrangement incl. metal rods	R
26.6	Shutter test	Pull and push instrument, electrical indicator	R
26.8	Change of temperature test	Environment test chamber	R
26.9	Pull test	Appropriate test apparatus, weights, time meter	R
27.1	Torque test at screws	Screw driver with torquemeter	R
28	Creepage distances, clearances	Caliper, appropriate gauges	R
29.2	Heat treatment	Heating cabinet	R



## IEC System for Conformity Testing and Certification of Electrotechnical equipment and Components

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
29.3	Ball-pressure test	Heating cabinet, ball test apparatus, caliper	R
29.5	Glow-wire test	Glow-wire test apparatus	R
29.6	Tracking test	Test apparatus according to IEC 60112	R
30	Corrosion test	Chemicals, humidity cabinet, heating cabinet	R
31	Short-circuit current withstand test	Short-circuit testing arrangement incl. appropriate measuring devices	S 3PPS
33	Vehicle driveover	Vehicle driveover test apparatus, weights, velometer, tyre pressure meter	R