

TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING

IEC 60691:2015, Edition 4.0

Thermal links – Requirements and application guide

“R”	Required
“S”	May be subcontracted, see OD 2012
“SPTL”	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
4	General requirements	None	-
5	General notes on tests	None	-
6	Classification	None	-
7	Marking	Apparatus for testing the indelibility of markings according to Annex G	R
8	Documentation	None	-
9.2	Lead secureness tests	Force gauge tester, tensile force 40 N, pushing force 8 N	R
9.6	Resistance to tracking	Tracking test apparatus (PTI) according to IEC 60112	R
9.7	Creepage and clearance	Vernier calipers, micrometer, slide gauge, etc.	R
9.8	Temperature and humidity cycle	Environmental chamber with heat, cold and humidity functions or individual humidity, cold and oven chambers, timer/clock	R
10	Electrical requirements		
10.1	Dielectric strength	High-voltage transformer, AC 45 – 62 Hz, trip current ≥ 100 mA, adjustable rate of change, metal foil (for insulated bodies)	R
10.2	Insulation resistance	DC-Insulation tester at least greater than $2 \times U_r$ or megaohm meter	R

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
10.3	Interrupting current	AC Power supply, load bank (resistive, inductive, motor loads, electromagnet (solenoid), etc.), voltmeter, ammeter, power analyzer meter, heating cabinet, insulation resistance meter, fuse in accordance with IEC 60127:2014 standard sheet 1 (if required), metal screen (if required), oven rated > Tf + 30 K, thermocouples, temperature controller or PLC	R
10.4	Transient overload current	D.C. current pulses test apparatus 100 cycles, amplitude of 15 Ir, duration of 3 ms with 10 s intervals, oscilloscope	R
10.5	Limited short-circuit test	AC or DC voltage source with short-circuit current capability of at least 200 A, non-renewable fuse sized in accordance with Clause 10.5.3, 915 mm copper wire (2) with cross-sectional area sized according to table 6 of IEC 60730-1:2013, cotton or metal screen	R
11	Temperature tests	Suitable signal measurement for the operation of thermal links. Heating cabinet with tolerance as specified in Clause 11.1.7, temperature meter/recorder with an accuracy of ± 1 K up to ≤ 100 K and 1% for > 100 K, fine wire thermo-couples, high voltage tester, timer, low-voltage/high-current supply w/shunts	R
12	Resistance to rusting	Humidity chamber	R
H.9.9	Push and pull tests	Push/pull gauge – 100 N	R