

TOUCH CURRENT tests, if necessary, are made using the relevant measuring instrument described in annex D or any other instrument giving the same results. A capacitively coupled a.c. source of the same line frequency and phase as the AC MAINS SUPPLY is applied to each telecommunication port such that 0,25 mA, or the actual current from other equipment if known to be lower, is available to flow into that telecommunication port. The current flowing in the earthing conductor is then measured.

b) EUT whose telecommunication ports have no reference to protective earth

If the telecommunication ports on the EUT do not have a common connection, each telecommunication port shall comply with 5.1.8.1.

If all telecommunication ports or any groups of such ports have a common connection, the total TOUCH CURRENT from each common connection shall not exceed 3,5 mA.

Compliance with item b) is checked by inspection and if necessary by the tests of 5.1.8.1 or, if there are common connection points, by the following test.

A capacitively coupled a.c. source of the same frequency and phase as the AC MAINS SUPPLY is applied to each telecommunication port such that 0,25 mA, or the actual current from the other equipment if known to be lower, is available to flow into that telecommunication port. Common connection points are tested in accordance with 5.1, whether or not the points are accessible.

5.2 Electric strength

NOTE Where specific reference to conducting the electric strength test according to 5.2 is made in other parts of this standard, it is intended that the electric strength test be conducted with the equipment in a well-heated condition according to 5.2.1.

Where specific reference to conducting the electric strength test according to 5.2.2 is made in other parts of this standard, it is intended that the electric strength test be conducted without preheating according to 5.2.1.

5.2.1 General

The electric strength of the solid insulation used in the equipment shall be adequate.

Compliance is checked in accordance with 5.2.2 while the equipment is still in a well-heated condition immediately following the heating test as specified in 4.5.1.

If components or subassemblies are tested separately outside the equipment, they are brought to the temperature attained by that part during the heating test (for example, by placing them in an oven) prior to performing the electric strength test. However, it is permitted to conduct electric strength testing of thin sheet material for SUPPLEMENTARY INSULATION or REINFORCED INSULATION, referenced in 2.10.5.2, at room temperature.

5.2.2 Test procedure

The insulation is subjected either to a voltage of substantially sine-wave form having a frequency of 50 Hz or 60 Hz, or to a DC VOLTAGE equal to the peak voltage of the prescribed a.c. test voltage. Unless otherwise specified elsewhere in this standard, test voltages are as specified in table 5B for the appropriate grade of INSULATION (FUNCTIONAL, BASIC, SUPPLEMENTARY or REINFORCED) and the WORKING VOLTAGE (U), determined in 2.10.2, across the insulation. DC values of WORKING VOLTAGE shall be used for DC VOLTAGES and peak values for other voltages.

The voltage applied to the insulation under test is gradually raised from zero to the prescribed voltage and held at that value for 60 s.

NOTE 1 For ROUTINE TESTS specified elsewhere in this standard, it is permitted to reduce the duration of the electric strength test to 1 s.

There shall be no insulation breakdown during the test.

Insulation breakdown is considered to have occurred when the current which flows as a result of the application of the test voltage rapidly increases in an uncontrolled manner, that is the insulation does not restrict the flow of the current. Corona discharge or a single momentary flashover is not regarded as insulation breakdown.

Insulation coatings are tested with metal foil in contact with the insulating surface. This procedure is limited to places where the insulation is likely to be weak, for example, where there are sharp metal edges under the insulation. If practicable, insulating linings are tested separately. Care is taken that the metal foil is so placed that no flashover occurs at the edges of the insulation. Where adhesive metal foil is used, the adhesive shall be conductive.

To avoid damage to components or insulation which are not involved in the test, disconnection of integrated circuits or the like and the use of equipotential bonding are permitted.

For equipment incorporating both REINFORCED INSULATION and lower grades of insulation, care is taken that the voltage applied to the REINFORCED INSULATION does not overstress BASIC INSULATION or SUPPLEMENTARY INSULATION.

NOTE 2 Where there are capacitors across the insulation under test (for example, radio-frequency filter capacitors), it is recommended that d.c. test voltages are used.

NOTE 3 Components providing a d.c. path in parallel with the insulation to be tested, such as discharge resistors for filter capacitors and voltage limiting devices, should be disconnected.

Where insulation of a transformer winding varies along the length of the winding in accordance with 2.10.10, an electric strength test method is used that stresses the insulation accordingly.

NOTE 4 An example of such a test method is an induced voltage test which is applied at a frequency sufficiently high to avoid saturation of the transformer. The input voltage is raised to a value which would induce an output voltage equal to the required test voltage.

No test is applied to FUNCTIONAL INSULATION, unless 5.3.4 b) has been selected.