

## Annex A (informative)

### Routine tests

#### Introduction

Routine tests are intended to be carried out by the manufacturer on each appliance to detect a production variation that could impair safety. They are normally carried out on the complete appliance after assembly but the manufacturer may perform the tests at an appropriate stage during production, provided that later manufacturing processes do not affect the results.

NOTE Components are not subjected to these tests if they have been previously subjected to routine tests during their manufacture.

The manufacturer may use a different routine test procedure provided that the level of safety is equivalent to that provided by the tests specified in this annex.

These tests are the minimum considered necessary to cover essential safety aspects. It is the manufacturer's responsibility to decide if additional routine tests are necessary. It may be determined from engineering considerations that some of the tests are impracticable or inappropriate and therefore need not be carried out.

If a product fails any of the tests, it is to be retested after rework or adjustment.

#### A.1 Earth continuity test

*A current of at least 10 A, derived from a source having a no-load voltage not exceeding 12 V (a.c. or d.c.), is passed between each of the **accessible earthed metal parts** and*

- *for **class 0I appliances**, and for **class I appliances** intended to be permanently connected to fixed wiring, the earthing terminal;*
- *for other **class I appliances**,*
  - *the earthing pin or earthing contact of the plug;*
  - *the earthing pin of the appliance inlet.*

*The voltage drop is measured and the resistance is calculated and shall not exceed*

- *for appliances having a **supply cord**, 0,2  $\Omega$ , or 0,1  $\Omega$  plus the resistance of the **supply cord**,*
- *for other appliances, 0,1  $\Omega$ .*

NOTE 1 The test is only carried out for the duration necessary to enable the voltage drop to be measured.

NOTE 2 Care is to be taken to ensure that the contact resistance between the tip of the measuring probe and the metal part under test does not influence the test results.

#### A.2 Electric strength test

*The insulation of the appliance is subjected to a voltage of substantially sinusoidal waveform having a frequency of approximately 50 Hz or 60 Hz for 1 s. The value of the test voltage and the points of application are shown in table A.1.*

Table A.1 – Test voltages

| Points of application   | Test voltage<br>V  |        |                      |
|---|--|--------|----------------------|
|   | Class 0 appliances, Class 0I appliances,<br>Class I appliances and Class II appliances |        | Class III appliances |
|   | Rated voltage  |        |                      |
|   | ≤150 V   | >150 V |                      |
| Between <b>live parts</b> and <b>accessible metal parts</b> separated from <b>live parts</b> by   |  |        |                      |
| • <b>basic insulation</b> only  | 800  | 1 000  | 400                  |
| • <b>double or reinforced insulation</b> <sup>a, b</sup>  | 2 000  | 2 500  | –                    |
| <sup>a</sup> This test is not applicable for <b>class 0 appliances</b> .<br><sup>b</sup> For <b>class 0I appliances</b> and <b>class I appliances</b> , this test need not be carried out on parts of <b>class II construction</b> if the test is considered to be inappropriate. |  |        |                      |

NOTE 1 It may be necessary for the appliance to be in operation during the test to ensure that the test voltage is applied to all relevant insulation, for example, heating elements controlled by a relay.

*No breakdown shall occur. Breakdown is assumed to occur when the current in the test circuit exceeds 5 mA. However, this limit may be increased up to 30 mA for appliances with a high leakage current.*

NOTE 2 The circuit used for the test incorporates a current sensing device that trips when the current exceeds the limit.

NOTE 3 The high voltage transformer is to be capable of maintaining the specified voltage at the limiting current.

NOTE 4 Instead of being subjected to an a.c. voltage, the insulation may be subjected to a d.c. voltage of 1,5 times the value shown in the table. An a.c. voltage having a frequency up to 5 Hz is considered to be a d.c. voltage.

### A.3 Functional test

*The correct functioning of an appliance is checked by inspection or by an appropriate test if the incorrect connection or adjustment of components has safety implications.*

NOTE Examples are verification of the correct direction of motor rotation and the appropriate operation of interlock switches. This does not require testing of thermal controls or **protective devices**.