



NORWOOD UK

Portable Appliance  
Testing Policy



## Portable Appliance Testing Policy

### **Purpose and Scope**

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It is our aim to encourage a high standard of Portable Appliance testing for all customers whilst maintaining compliance with relevant HSE and NICEIC guidelines.

This policy outlines the standard of testing expected by all portable appliance testing engineers, who are employed by the Company.

This procedure may be amended by the Company at its discretion from time to time.

Failure to follow the correct procedure will result in a thorough investigation undertaken by the Company which may result in disciplinary action.

If an act of gross misconduct is committed the engineer will be liable to summary dismissal.

### **Principles**

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All testing should be carried out under the IEE's Code of Practice for In-Service Inspection and Testing of Electrical Equipment and conforms to HSE and NICEIC guidelines.

Before any testing commences on an appliance, all engineers should assess the environment to make sure testing can be carried out safely and with no risk to either themselves or people working in the area.

The following steps should be adhered to at all times on all items, including; all 230, 110v equipment and low voltage equipment (unless otherwise advised).

#### **1) Preliminary Visual Inspection**

Visually check the appliance for safety or damage to the plug, fuse, wiring, cable and protective case of the appliance. All engineers should ask themselves questions such as;

- The Flex
  - Is it in good condition?
  - Is it free from cuts, fraying and damage?
  - Is it in a location where it could be damaged?
  - Is it too long, too short or in any other way unsatisfactory?

- The Plug
  - Is the flexible cable secure in its anchorage?
  - Is it free from any sign of overheating?
  - Is it free from cracks or damage?
  
- The Flex Outlet
  - Is there any sign of overheating?
  - Is it free from cracks or other damage?
  
- The Appliance
  - Does it work?
  - Does it switch on and off properly?
  - Is it free from cracks, contamination damage to the case, or damage which could result in access to live parts?
  - Can it be used safely?
  
- The Users
  - Are they satisfied that the equipment works properly?
  
- The Environment
  - Is the equipment suitable for its environment?
  
- Suitability for the Job
  - Is the equipment suitable for the work it is required to carry out?
  
- Incorrect fuses should always be changed if identified during the preliminary visual inspection as follows;
  - 0-700 watts – 3 amp fuse
  - 700-1100 watts – 5 amp fuse
  - 110+ watts – 13 amp fuse
  
- All engineers should also record the amp of the fuse they have installed in the comments section of the tester.
  
- Faulty plug tops should always be changed if identified during the preliminary visual inspection.
  
- Any minor rewires should also be repaired during testing, for example, a faulty connection to a plug top or damaged flex cable.

## 2) Earth Bond Testing

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The safety of certain appliances depends upon a connection with the earth. A test should be carried out using electrical testing equipment to ensure a safe earth is present in the appliance on all Class One appliances.

This test is to ensure that the connection between the earth pin in the mains plug of the appliance and the metal casing of the appliance is satisfactory and of sufficiently low resistance.

### **3) Insulation Testing**

A test should be carried out using electrical testing equipment to ensure the insulation resistance in the appliance is at a safe level.

This test is used to verify that adequate insulation exists between the mains supply pins and the earth.

### **4) Earth Leakage Measurement**

A test should be carried out to monitor the current flow through the earth lead of the appliance.

The leakage test shows the current being lost through leakage as the difference in the currents flowing in the live and neutral conductors. This difference is total leakage taken away from the appliance. All Class One appliances should have an earth bond test.

This test is of value when an appliance incorporates a number of sequences, which may change the electrical characteristics of the appliance during its operation.

### **5) Load Test**

A test should always be carried out applying a voltage through a current limiting resistor to the mains supply plug. This checks that the current flow will not be excessive when full voltage is applied to the appliance.

### **6) Substitute Leakage Test**

The Substitute Leakage Test applies a nominal voltage of 40V AC RMS to the appliance and is applied between the earth pin and both the live and neutral pins of the supply plug.

This test can prove useful in situations where neither conventional insulation nor flash tests are acceptable methods of testing the insulation of the appliance.

## 7) Flash Testing

This test is very rarely carried out and only then on certain appliances such as power tools. A test is carried out to measure the insulation of an appliance if a very high test voltage is applied to it.

This test is used to determine that the insulation is of sufficient strength to prevent breakdown, particularly where high transient voltages are likely.

## 8) Touch Leakage Test

The touch test displays the current that would flow if a person touched the appliance.

The electrical test equipment detects any current flowing in the earth bond lead and indicates the potential leakage through a metal panel.

## 9) Functional Check

A test should be carried out to ensure that the appliance is working correctly and basically does what it is supposed to do in the right environment.

## 10) Microwave Leakage Testing

Tests are carried out to detect the leakage level from domestic and industrial microwave ovens. This test complies with national standards on permitted exposure levels.

Engineers should test all microwave ovens for potentially dangerous leaks using equipment provided. Unless advised otherwise. Microwave emission labels should always be applied if this test has been carried out (usually purple in colour).

## 11) Spurred Appliances

All spurred appliances should be tested by checking the casing and flex to the spurred socket. The fuse in the spurred unit must also be checked to determine that it is the correct value for the appliance it supplies.

## Passed Appliances

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If items pass all ten steps, then this should be identified with a company label stating;

- The date of testing
- The next date of testing (if required)
- The appliance code

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## Failed Appliances

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Failed appliances should be logged on the tester as failed. A red sticker is then applied to the appliance. Notes must also be made in the comments section of the tester to determine the action taken or recommendation for the customer.

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Signed for and on behalf of the company

A handwritten signature in blue ink, appearing to read 'Jo Shuttlewood'.

Jo Shuttlewood – HR Director