

PAT26 Testing Notes

Please read carefully before use.

1. The testing of portable appliances includes a visual inspection as indicated on the sample Certificate of Inspection. The inspection and tests should only be performed by a competent person.

Further details on inspection standards are available from H.S.E. Of particular interest is Guidance Note GS23 (ISBN 0 11 883567 X).

2. When testing appliances, the term 'portable' applies to anything fitted with a mains plug including photocopiers, offset litho machines, etc.
3. If the appliance has a mains on/off switch, this should be switched on prior to testing. Push the blue switch and observe the led above. A continuous blue or flashing blue confirms that the on/off switch and fuse are OK.
4. When performing an insulation test on Class 2 (double insulated) appliances, the test lead crocodile clip should be pressed against various parts of the insulated case, e.g. near where the mains supply enters etc. Any of the test sockets may be used for this test. Care should be taken to hold the crocodile clip via the insulating shroud. If the metal of the clip is touched during the test, a mild tingling may be felt - this is unpleasant but not dangerous.

Some double insulated appliances may have an insulating case but metal screws etc. may be visible; these do not necessarily mean that it is Class 1! Provided the screws are driven into enclosed insulating material, Class 2 integrity is maintained.

5. To test an extension lead, plug the lead into the 13A socket on the PAT5001 and connect the test lead fitted with a 13A plug into the extension lead socket. 25A or 8A tests may then be applied as required. When testing extension leads and items having very long leads (e.g. overhead projectors etc.), the Earth Bond test result may show a fail. The earth resistance of a lead is dependent on both its length and the diameter of the cable. Due allowance should be made for these factors when interpreting the results. As a guide, 6A cable has a resistance of 0.028 ohms per metre and 13A cable 0.0175 ohms per metre. If an appliance fails using the 25A socket, retest using the 8A socket.
6. The insulation test applies 450-550V d.c. between the live and neutral conductors and earth. If the appliance is fitted with mains input filter capacitors, this can stress these components. The fitting of filter capacitors may also give misleading results - under these circumstances, the manufacturer's advice should be sought.
7. When testing electric kettles, the test lead should be clipped to the kettle element. In hard water areas, this will require you to scrape away scale until the bare metal can be seen.
8. When testing computers, ensure that the earth bond test point is a genuine mains earth and not a signal earth point. If there is any doubt, simply complete a visual inspection and skip the PAT5001 tests. A note should be made on the Certificate of Inspection. **Please note. When testing computers ensure that peripherals (e.g. printers, monitors etc) are disconnected. Sometimes they provide a pseudo earth path, which would give an incorrect insulation test fail.**
9. When testing IEC or kettle leads, the lead should be plugged between the IEC and 13A test connectors on the PAT26. The selector switch should be set to 25A. The test lead is not required.
10. When assessing Class 1 and Class 2 appliances and plug fuse values, the following information may be helpful:

Items fitted with 2 core cable are Class 2 (double insulated). Some Class 2 appliances may be fitted with a 3 core cable but Class 1 appliances are never fitted with 2 core.

Plastic electric kettles are Class 1 (see 7 above).

Generally speaking, the only appliances that require 13A fuses are kettles, water heaters, irons and electric heaters. Colour televisions require a 5A fuse. Most other appliances require a 3A fuse - if in doubt fit a 3A fuse. If this "blows", fit a 5A, then a 13A.

11. When unplugging from the mains, a faint whining sound may be heard. This is the capacitors discharging through the mains test circuit and does not constitute a fault.

It is recommended that this unit be calibrated yearly.



PAT26 Portable Appliance Tester

Certificate of Inspection

Inspector.....

Appliance Date

Location Serial Number

	TEST	PASS REQUIREMENT	PASS	FAIL	NOTES
1.	Inspection of Cable	No insulation damage BS colours	.....	.....
2.	Inspection of Plug	No damage Correct fuse	.....	.....
3.	Inspection of male connector	BS type or equivalent	.....	.....
4.	Open socket without tool	Unopenable	.....	.....
5.	Pull cable from female connector	No movement	.....	.....
6.	Cable grommet or clamp	Cable insulation protected Cable pull - no movement Cable twist - no movement	.....	.....
7.	Inspection of mains switch	Correct operation No damage	.....	.....
8a.	Case Earth connection (Class 1)	No damage	.....	.....
8b.	Earth Bond (Appliance)	<0.1Ω/0.25Ω	.....	.....
					Earthed case
8c.	Earth Bond (Extension lead)	<0.25Ω/0.35Ω	.....	.....
9a.	Insulation Test (Class 1)	>2MΩ	.....	.....
9b.	Insulation Test (Class 2)	>7MΩ	.....	.....	Double Insulated
					
10.	Remove accessible fuse	No damage No access to live parts >50V	.....	.....

ASSESSMENT

Recommended date for next test/...../.....

Signed

PAT 26 Portable Appliance Tester

Instructions for Use

1. Plug the Portable Appliance Tester into a 13A socket. The unit should give a short beep and the mains supply monitor lamp should glow green. If the buzzer sounds and the monitor lamp glows red, then unplug the unit immediately and get a qualified electrician to check the socket wiring. The monitor sounds the alarm when either or both of two faults is present:

1. the earth connection to the socket is faulty
2. the mains and neutral wiring to the socket is reversed

This facility allows the user to easily check the mains sockets as well as appliances and may be used to test extension leads (see below).

2. The Portable Appliance Tester has the facility to supply different earth bond test currents according to the rating of the appliance being tested. Generally speaking, the different currents should be used as follows:

- | | |
|------|--|
| 25A | this should be used for appliances above 1KW (e.g. heaters, kettles etc.) |
| 8A | this should be used for all other appliances |
| I.T. | this is a special facility for testing computers, monitors, televisions etc. |

The test current varies according to the appliance being tested but will be about 100mA to protect delicate circuitry. It should be noted that this test is not as stringent as the other two and only serves as an indication of appliance condition.

3. The insulation test is designed for both Class 1 (earthed) and Class 2 (double insulated) appliances. The pass bands for these two types of appliance are different and are shown on the meter as different colour bands:

- | | |
|---------|---|
| Class 1 | pass level $>2M\Omega$ (yellow or green band) |
| Class 2 | pass level $>7M\Omega$ (green band only) |

4. To test an appliance:
1. Plug it into the mains socket on the Portable Appliance Tester.
 2. Select the appropriate earth bond test current using the rotary switch (earthed appliances only).
 3. Plug the earth bond test lead into the appropriate socket (indicated by the glowing led).
 4. Firmly connect the crocodile clip to bare metal on the appliance case. If the appliance has an on/off switch, this must be switched ON.
DO NOT TOUCH THE APPLIANCE WHILST THE TESTS ARE IN PROGRESS.
 5. Press the blue button and observe the led above it. It should either flash or give a steady blue colour. This indicates that the appliance fuse is OK and that the appliance circuitry is believed to be OK.
 6. Press the Earth Bond test button for 5 seconds and note the result. (only required for Class 1 appliances)
 7. Press the Insulation test button for 5 seconds and note the result.

5. Extension leads:
1. Plug the extension lead into the mains socket on the Portable Appliance Tester.
 2. Plug the extension lead test lead into the extension lead socket and plug the other end into the appropriate earth bond test current socket.
 3. Select the appropriate earth bond test current using the rotary switch. If the lead has an on/off switch, this must be switched ON.
 4. Press the Earth Bond test button for 5 seconds and note the result.
 5. Press the Insulation test button for 5 seconds and note the result.
 6. Press the blue button and observe the led above it. It should either flash or give a steady blue colour. This indicates that the extension lead fuse is OK. The test 13A plug is fitted with a LED. This should glow green, when the blue button is pushed, if the polarity is correct. If it glows red, the polarity is reversed.

6. IEC lead testing

Select 25A test. Plug the IEC lead between the IEC socket and the mains socket. Press the Earth Bond, Continuity and Insulation buttons as above. The led to the left of the blue led indicates polarity as above.

7. When testing 110V appliances plug the 110V to 13A adapter lead into the 13A socket on the PAT26, plug the 110V appliance into the 110V socket and proceed as above.