



## How to use a checkbox with the PrimeTest 100?

The PAT Checkbox can be used to confirm the Earth Continuity and Insulation Resistance measurements. However, the Leakage value may not be correct as the leakage test performed by the PrimeTest 100 is a Substitute Leakage test at 40Vac (not mains powered) and therefore the instrument cannot energise the checkbox circuitry to produce the value on the rear of the box.

Substitute leakage is measured between both line and neutral and the protective earth conductor. It is similar to an insulation resistance measurement except that a test voltage of 40V/50Hz is used rather than 500V DC. The measured current is then automatically scaled by the tester to show the leakage that would present at mains voltage (i.e. scaled by a factor of 6). If the appliance under test has filter components between both line-earth and neutral-earth (eg as with some washing machines) the substitute leakage method will measure both leakage currents and does not take into account the additional leakage path between neutral-earth.

*Note, many of our instruments that do a powered leakage test (eg PT250+ or Apollo):*

Differential leakage (generally a class I test – the Protective Conductor Test) is measured at the normal supply voltage with a normal supply connection i.e. it is a true indication of the leakage under normal operating conditions and is therefore a much more robust measurement. If the differential leakage measurement value is less than the limits specified by the IET CoP then the appliance is OK.

Direct leakage (generally a class II test – Touch Current test) is a direct measurement of the leakage in the earth using a 2kOhm body model – for this to be performed correctly the earth probe needs to be used.

If you require more help, please contact us at  
<https://www.seaward.com/cms/enquire/>.