FINDING A FAULT — AND WHERE YOU RESTART

AFTER A FIX, WHERE DO YOU RESTART YOUR TESTS?

Take that ring with the high neutral reading. Working the fault out is a better lesson than any diagram.

TEST	RESULT
Continuity, line and CPC	Good — r1 0.01 Ω and r2 0.02 Ω, as expected
Insulation resistance, live conductors to earth (line and neutral joined, to CPC, global)	**> 2000 MΩ** — good
Continuity, neutral end to end	**0.52 Ω** against 0.01 Ω on the line — outside the 0.05 Ω tolerance
Insulation resistance, line to neutral (global)	**Fail**

→ Line and CPC continuity are good, and nothing is breaking down to earth. The two results that are wrong — neutral continuity and line-to-neutral insulation — **both involve the neutral**. So the **neutral conductor** is where you look first — and you've narrowed it down without opening anything up. **That's fault finding.**

What it's likely to be: a conductor slipped out of a terminal and touching something it shouldn't, a high-resistance joint, or damaged insulation with bare copper in contact somewhere.

THE QUESTION THAT CATCHES PEOPLE

✋ The fault gets rectified — a re-termination, or a new length of cable. **Where do you restart the tests?** Not from where it failed. **You go back to the beginning of the sequence** and start again at continuity.

Reg 643.1: when a test shows a failure, **that test and those preceding**, the results of which may have been influenced by the fault, are repeated after the fault has been put right. A new length of cable or a re-termination disturbs continuity, so here that is the whole sequence from continuity on.

Why.
Whatever you did to fix it, you disturbed the installation. The continuity result you had before was taken on a circuit that no longer exists in that form. Re-terminate, retest continuity, then insulation resistance, then carry on through the sequence.

And if you're the tester rather than the installer, the **installer** goes back and fixes it. Then the whole sequence runs again.

GN3 · 2.6 · Figure 2.12 · p.57 · the sequence of tests ★ | **OSG · Section 10**

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