BEFORE YOU ISOLATE: THE STEP MOST PEOPLE WERE NEVER TAUGHT

WHY CLAMP THE EARTHING CONDUCTOR BEFORE YOU TOUCH ANYTHING?

Safe isolation used to begin at the main switch. It does not any more. An extra layer was added, and it sits **in front of** everything in the next section: you check whether current is flowing where it should not be, **before** you touch anything.

What you are looking for is **neutral current diversion** — current that has lost its proper route home and is finding another one. It happens when the combined protective-earth-and-neutral conductor in the supply network breaks on a PME supply. The neutral current then returns through whatever else is connected: the earthing system, the bonding, the pipework, the lot.

> ✋ **It is not only a TN-C-S problem.** A TN-S or TT installation that **shares extraneous-conductive-parts** with a nearby PME installation can carry the same diverted current. And because it can originate next door, **it can be present even when your installation is isolated.** That is the whole reason this check exists.

With an open PEN, the line-to-neutral voltage can rise to around **400 V**, and anything bonded to the earthing system — taps, a metal sink, the case of an appliance — can become live to touch.

STEP 1 — CLAMP THE EARTHING CONDUCTOR AND THE MAIN BONDING, WITH THE INSTALLATION STILL ON

A clamp meter round the earthing conductor, then round each main protective bonding conductor. In a dwelling with a maximum demand up to 100 A you would expect **a few milliamps**. A small reading is normal. **A large one is the warning.**

> **There is no published threshold, and that is deliberate.**
> The book gives you an expectation, not a limit. You are being asked to judge. Worth knowing: an ordinary load clamp gets unreliable right where it matters — a **leakage** clamp is the accurate one below 5 mA.

✋ **If you suspect a broken PEN or diverted neutral current, ring the DNO immediately on 105.** That is the action, not a note for later. It is a network fault and it is not yours to fix.

Guidance Note 3 · Appendix D · the eight steps in full

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