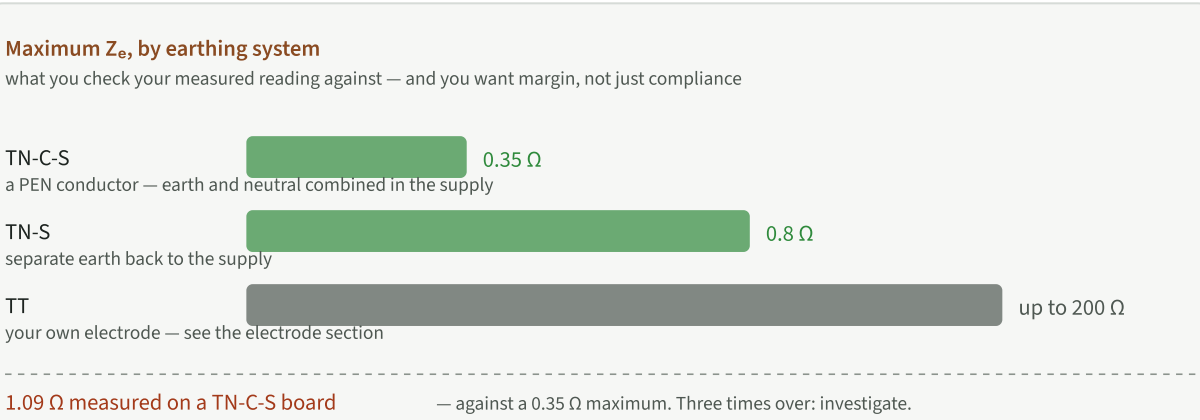
MAXIMUM ZE, BY EARTHING SYSTEM

1.09 OHMS ON A TN-C-S. NOW WHAT?

These are the numbers you check your measured Z_e against. They are the typical maximum figures the DNO quotes, given in **Electrician's Guide to the Building Regulations** · p.53 — a reading above them means the supply earth needs investigating.

SYSTEM	MAXIMUM Z_E
TN-C-S (PEN conductor)	**0.35 Ω**
TN-S	**0.8 Ω**
TT	See the electrode section — up to 200 Ω



The bar lengths are not to scale across systems — TT is in a different order of magnitude, because it depends on an electrode in the ground rather than a conductor back to the supply. What matters is the comparison against your own reading: a TN-S result of 0.42 Ω against a 0.8 Ω maximum is comfortable, while 1.09 Ω on a TN-C-S system is three times the typical maximum.

TN-C-S means a PEN conductor

— a combined protective and neutral conductor in the supply, with the earth and neutral joined.

You want margin, not just compliance.

A TN-S reading of 0.42 Ω against a 0.8 Ω maximum is comfortable. A 1.09 Ω reading on a TN-C-S supply is well above 0.35 Ω — exactly the sort of thing a measurement catches and an assumption does not.

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