HOW TO READ TABLE B1, AND THE EXPECTED R2 OF A BONDING CONDUCTOR

WHICH ROW FOR AN R2 TEST?

HOW TO READ TABLE B1 — THE BIT THAT GOES WRONG

Guidance Note 3 · Appendix B · Table B1, and the formula that turns it into a resistance. The table gives conductor resistance in **mΩ per metre**, and it has **two conductor columns**. Which row you take depends on how many conductors your two leads are on.

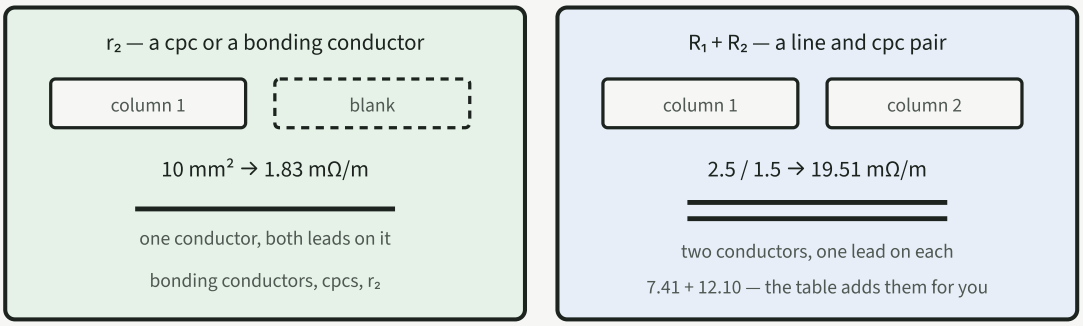
YOUR TEST	CONDUCTORS	WHICH ROW
r_2 — a cpc or a bonding conductor	One	Your size in column one, **second column blank**
$R_1 + R_2$ — a line and cpc pair	Two	The row with **both columns filled**

There are several rows with 10 mm² in the first column.
For an r_2 test you want the one that has **nothing** written in the second column — the single conductor on its own. That row gives **1.83 mΩ/m**.

The stars mean twin and earth.
Every size with a star in the first column is a twin-and-earth size. The stars stop at **16 mm²** because that is the largest twin and earth made — there is nothing starred above it.

✋ **Remove parallel paths first.** Disconnect the bonding conductor before you test it, so parallel paths cannot flatter your reading. Parallel paths are only left in place for **Z_s, Z_{db} and prospective fault current** — there you want them.

Two leads, one conductor → one column. Two leads, two conductors → both columns.



✋ Taking a pair row for a single-conductor test is the classic mistake — it roughly doubles your expected value.

Ask one question before you look: how many conductors are my two leads sitting on? One means a blank second column. Two means both are filled.

CALCULATION 1: THE EXPECTED R2 OF A BONDING CONDUCTOR

Bonding conductors in a property are generally **10 mm²** (sized from

> 🔲 **Electrician's Guide to the Building Regs** · Tables 3.3.2a/b · p.59

), and say it runs **7 metres** from the MET to the gas service pipe.

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10 MM² BONDING CONDUCTOR, 7 M, MET TO GAS SERVICE PIPE
It is an r2 test → one conductor → Table B1, 10 mm², second column blank

mΩ/m for 10 mm² on its own = 1.83

R = (1.83 × 7) ÷ 1000
  = 12.81 ÷ 1000
  = 0.013 Ω
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That is what your meter should show when you do that test. And it is a **good** result, because continuity wants the resistance as low as possible.

> **Why divide by 1000?**
> The table is in **milli**ohms per metre. You want ohms, so the thousand comes out at the end. Every one of these calculations ends the same way.

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