TABLE 54.7, AND SIZING THE EARTHING CONDUCTOR

IS A CPC ALWAYS HALF THE LINE CONDUCTOR?

A straight question: *when do you actually use Table 54.7?* The answer is a genuinely useful distinction.

§ **Table 54.7** gives the minimum CSA of a protective conductor **in relation to its associated line conductor**, where the protective conductor is **the same material** as the line conductor.

You wouldn't reach for it to check the CPC in twin & earth — T&E only goes up to 16 mm², and the CPC in it is never larger than the line conductors. Where you **do** use it is choosing an **earthing conductor** from the size of the incoming tails.

! It is **not** a "half the line conductor" rule. Up to 16 mm² the protective conductor is the **same size**; from 16 to 35 mm² it is **16 mm²**; only **above 35 mm²** does it become half. Find the band the line conductor falls in and read the answer.

LINE CONDUCTOR S	MINIMUM PROTECTIVE / EARTHING CONDUCTOR
S ≤ **16 mm²**	S — the same size
16 < S ≤ **35 mm²**	**16 mm²**
S > **35 mm²**	**S ÷ 2**, rounded up to a size that exists

TWO WORKED EXAMPLES

```
25 mm² incoming tails
25 falls in the 16 < S ≤ 35 mm² band
Table 54.7 → 16 mm² earthing conductor

95 mm² incoming line conductor
Over 35 mm² → S ÷ 2 = 47.5 mm² — no such cable
Round up → 50 mm² earthing conductor
```

The 25 mm² → 16 mm² pairing should be instant.

Know it without thinking — it comes up in nearly every module. If a question gives you 25 mm² tails, the earthing conductor is 16 mm² and you've answered it without opening the book.

AND BONDING CONDUCTORS — 544.1.1

Separate rule, separate place in the book, and a favourite exam question. Main protective bonding conductors are in **544.1.1**:

- **Not less than half** the CSA required for the earthing conductor of the installation, **and**
- **need not exceed 25 mm²** for copper — that's the ceiling a typical question asks for on a TN-S system.

> **Table 54.7** · p.211 · protective conductor vs line conductor ★

> **544.1.1** · main protective bonding · half the earthing conductor, max **25 mm²** copper ★

> **542.1.2** · supply arrangements · earthing terminal connected to the earth point of the source (TN-S)

Free section from Sparky Study Notes. The full Level 3 notes, 1,463 practice questions and the video lessons: sparkystudynotes.co.uk