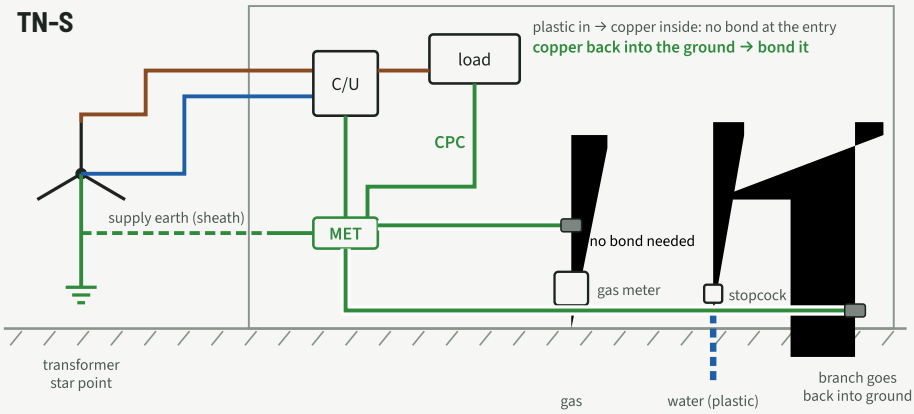
WHEN TO BOND, AND WHEN NOT TO

WATER COMES IN AS PLASTIC. DO YOU BOND IT?

An electrician needs to know **when to bond** and, just as importantly, **when not to**. Ask one simple question:

> **"Is it a conductive part that comes out of the ground?"** Yes → it's extraneous, so bond it. No (plastic, or never touches the ground) → don't.



A plastic water supply pipe comes into the building, and the plumber changes to copper just inside. The incoming water needs **no** main bond. But the copper branch goes back into the ground and comes back up, so that pipe **is** extraneous and needs bonding. The metal gas pipe is bonded as normal.

- **Plastic incoming pipe:** no bond, because plastic is an insulator. That's true even if it changes to copper inside.
- **Copper that goes back into the ground** and comes up again: bond it where it comes up.
- **Everything plastic** (or no metal service comes from the ground): **no main bonding at all**.
- Extraneous parts aren't always gas and water. Look for an **oil supply pipe** (rural properties without mains gas) and **exposed structural steel** that goes into the ground.

A bit of history

In the late '90s and early 2000s, anything copper-coloured got bonded. That's why you still see pipes **cross-bonded** together in airing cupboards, and bonds on baths, radiators and kitchen sinks. It's complete overkill. Now we bond **once**, within 600 mm of where the service comes in on the consumer's side, plus anywhere a pipe comes back up from the ground.

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