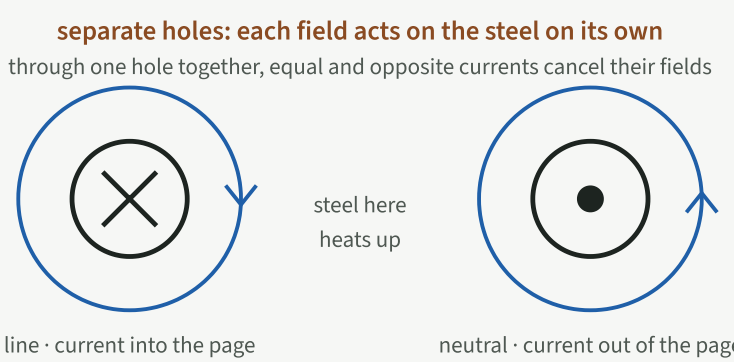
MUTUAL DETRIMENTAL INFLUENCE (515)

CAN ONE SYSTEM HARM ANOTHER JUST BY BEING NEAR IT?

Section **515** is about harmful influence between the electrical installation and anything else — and between parts of the installation itself.

A practical case, from **Reg 521.5.1**: **line and neutral must pass through the same hole** in a ferromagnetic (steel) enclosure. Split them into separate holes and the steel between them heats up.



Current through a conductor produces a magnetic field round it, with a direction set by the right-hand screw rule. Line and neutral carry equal and opposite currents. Pass them through separate holes, with steel between them, and each field acts on the steel without the other cancelling it, heating the metal — which can start a fire.

⚡ Run **both tails through one gland**. Their fields then cancel, because the currents are equal and opposite.

The case 515 itself covers (515.2): circuits at very different voltages sharing an enclosure — 230 V AC alongside 50 V DC, for instance.

515 · prevention of mutual detrimental influence

521.5.1 · line and neutral together through ferromagnetic enclosures

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