

Home Wiring Good-Practice Guide

A practical homeowner's guide to safe, fire-resistant house wiring in India.

Good wiring is invisible when it works and catastrophic when it fails. This guide covers the essentials of planning a safe, fire-resistant home wiring system in India. It is a homeowner's overview — the actual installation should always be done by a licensed electrician.

1. Plan your circuits

Separate your loads onto their own circuits: lighting and fans, general power sockets, the kitchen, geysers and each air conditioner. Dedicated circuits for heavy appliances prevent overloading and make faults easy to isolate.

2. Choose the right wire size

Size every circuit to the load it carries and the length of its run. Under-sized wire overheats; over-sized wire wastes money. Use the household load-to-size guide and the wire-size calculator, and keep voltage drop within 3%.

3. Choose a fire-safe grade

The grade matters as much as the size. In a fire, ordinary PVC wire spreads flame and gives off thick, toxic smoke. Low-smoke, halogen-free grades — HR-FR-LSH and HFFR (such as APAR Anushakti and Fire Protekt) — resist flame, emit far less smoke and no corrosive halogen gas, buying precious time to escape.

4. Earthing & protection

A proper earthing system plus the right protective devices — MCBs for overload/short-circuit and an RCCB/RCD for earth-leakage — are what actually keep people safe. Never bypass or under-rate them.

5. Buy genuine, certified wire

Insist on the ISI mark with a BIS licence number, and wire made to IS 694 (or IS 17048 for HFFR). Counterfeit and under-spec wire is a leading cause of house fires. When in doubt, check the printed markings against the manufacturer's datasheet.

6. Common mistakes to avoid

- Using one size of wire for the whole house regardless of load.
- Overloading a single socket circuit with high-wattage appliances.

- Choosing ordinary PVC wire to save a little money in concealed conduits.
- Poor or missing earthing.
- Joints inside walls instead of proper junction boxes.

7. When to rewire

Consider a rewire if your installation is decades old, if you see scorched sockets, frequent tripping, flickering lights or a burning smell, or if you are adding heavy modern loads (multiple ACs, induction cooking, EV charging) to old wiring.

This guide is general information, not a substitute for a licensed electrician's design and an on-site load assessment per IS 732.

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