

House-Wire Current-Rating (Ampacity) Chart

Current-carrying capacity of copper house wires (IS 694, 1100 V), with derating factors.

Use this chart as a quick reference for the approximate current-carrying capacity of single-core copper house wires. Values are for **1100 V PVC-insulated wire (IS 694), enclosed in conduit at about 40°C ambient** — the most common house-wiring condition in India.

Conductor size (sq mm)	Approx. current rating (A)	Typical household use
1.0	11	Lighting circuits
1.5	14	Lighting, fans, light-duty sockets
2.5	19	5–16 A power sockets, general purpose
4.0	26	Geyser / water heater, 1–1.5 ton AC, kitchen
6.0	34	2 ton AC, sub-mains
10	46	Sub-mains, distribution-board feeders
16	61	Mains / heavy feeders

Indicative ratings for single-core copper, PVC, 1100 V, enclosed in conduit at ~40°C. Confirm against the APAR datasheet and IS 694 for your installation.

Derating factors

The ratings above must be *reduced* when the wire runs hotter than 40°C or shares a conduit with other loaded circuits. Multiply the rating by the factor below.

Ambient temperature (PVC, base 40°C)

Ambient temperature	35°C	40°C	45°C	50°C	55°C
Factor	1.05	1.00	0.94	0.87	0.79

Grouping (circuits bunched in one conduit)

Number of circuits	1	2	3	4	6
Factor	1.00	0.80	0.70	0.65	0.57

How to use: Effective rating = base rating × temperature factor × grouping factor. Example: a 2.5 sq mm wire (19 A) at 45°C with 3 circuits bunched → $19 \times 0.94 \times 0.70 \approx \mathbf{12.5\ A}$.

Derating factors shown are typical industry values for guidance. Final design current and ratings should follow IS 732 and be confirmed against the APAR product datasheet.

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