

Copper vs Aluminium Wire: Comparison Table

How copper and aluminium conductors compare - conductivity, weight, cost and best use.

Copper and aluminium are the two conductor metals used in wiring. Each has its place - here is how they compare.

Property	Copper	Aluminium
Conductivity (IACS)	~100% (reference)	~61%
Current capacity (same size)	Higher	Lower - needs ~1.6x the area for the same current
Weight	Heavier	About one-third the weight
Cost (same ampacity)	Higher	Lower
Joints & terminations	Stable, reliable	Oxidises; needs proper lugs and re-torquing
Flexibility	More ductile / flexible	Less flexible
Typical use	House wiring, most internal circuits	Service mains, large feeders, overhead lines

Bottom line: for house wiring, copper is the standard choice - better conductivity in a smaller size and dependable joints. Aluminium earns its place in large feeders and service entrances where its light weight and lower cost matter most. APAR offers both - copper house wires and Alumshakti aluminium multicore cables.