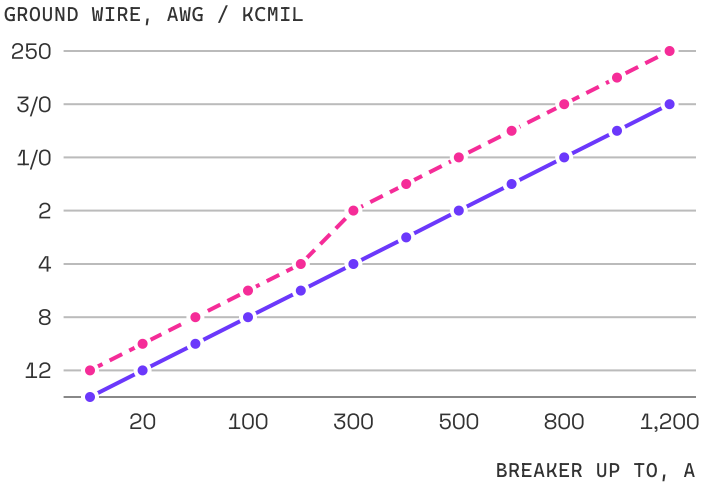
Ground wire size chart

A 20 amp circuit needs a 12 AWG copper ground wire, a 60 amp circuit 10 AWG, a 100 amp circuit 8 AWG and a 200 amp circuit 6 AWG copper. Aluminum ground wires are one or two sizes larger.

Minimum equipment grounding conductor size by breaker rating, copper and aluminum

BREAKER UP TO	COPPER	ALUMINUM
15 A	14 AWG	12 AWG
20 A	12 AWG	10 AWG
60 A	10 AWG	8 AWG
100 A	8 AWG	6 AWG
200 A	6 AWG	4 AWG
300 A	4 AWG	2 AWG
400 A	3 AWG	1 AWG
500 A	2 AWG	1/0 AWG
600 A	1 AWG	2/0 AWG
800 A	1/0 AWG	3/0 AWG
1,000 A	2/0 AWG	4/0 AWG
1,200 A	3/0 AWG	250 kcmil



Smallest ground wire by breaker rating.

How to read the ground wire size chart

Find the first row at or above the breaker that protects the circuit. A 30 or 45 amp circuit uses the 60 A row. The ground wire never needs to be larger than the circuit's hot wires.

Ground wire on long runs

When the hot wires are made larger than ampacity requires, usually for voltage drop, the ground wire must grow in the same proportion of circular mils. For example, a 100 A copper feeder upsized from 3 AWG to 1/0 AWG needs a 4 AWG copper ground instead of 8 AWG. The wire size calculator does this automatically.

SOURCES

- NFPA 70, National Electrical Code (2023): Minimum size equipment grounding conductors, Table 250.122

▶ Compared with 1 published document, last on 2026-11-13

Calculated by Calculate.diy with the method of the National Electrical Code® (NEC®), 2023 edition; not the NEC text. Methodology. For planning only: check local code and use a licensed electrician.