Extension cord gauge chart

A 15 amp tool on a 25 ft extension cord needs 14 AWG, and on 100 ft it needs 12 AWG. A 10 amp load needs 16 AWG at 50 ft. The chart keeps the voltage drop at 120 V within 5%.

Extension cord gauge by load in amps and cord length

LOAD	25 FT	50 FT	100 FT	150 FT
5 A (600 W)	18 AWG	18 AWG	16 AWG	14 AWG
8 A (960 W)	18 AWG	16 AWG	14 AWG	12 AWG
10 A (1,200 W)	18 AWG	16 AWG	12 AWG	12 AWG
13 A (1,560 W)	16 AWG	14 AWG	12 AWG	10 AWG
15 A (1,800 W)	14 AWG	14 AWG	12 AWG	10 AWG

Extension cord ratings by gauge

Extension cord ampacity by gauge for two current-carrying conductors

CORD GAUGE	RATING, AMPS
18 AWG	10 A
16 AWG	13 A
14 AWG	18 A
12 AWG	25 A
10 AWG	30 A

Ratings are for a cord with two current-carrying conductors, like a standard three-prong extension cord. A household plug and outlet are rated 15 A, so a cord rated higher still carries no more than 15 A through a standard plug.

How the cord gauge is chosen

Each cell is the thinnest cord rated for the load whose voltage drop at 120 V stays within 5%. A dash means no common cord gauge is enough: move the tool closer to the outlet or use a shorter, heavier cord. The amp rating on the tool's nameplate is the load to look up.

SOURCES

- NFPA 70, National Electrical Code (2023): Ampacity of flexible cords and cables, Table 400.5(A)(1)
- NFPA 70, National Electrical Code (2023): Conductor properties, Chapter 9 Table 8

▶ Compared with 3 published documents, 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.