

EXTENSION CORD SELECTION GUIDE



An extension cord is an essential piece of equipment for those jobs where the power cord is too short to reach an outlet. Here are some key considerations to help you choose the electrical extension cord or power strip that best suits your needs while helping ensure safety, device performance, and energy efficiency.

You'll need to know where and how the extension cord will be used, how much power it needs to deliver, and whether configurations such as twist-lock or specialty plugs are required.

NEC designations indicate cords' intended use and durability. That's mainly dependent on what type of insulating cover, or jacket, protects the wires that conduct the electrical power. The cord's power capacity, or voltage, also is designated; see whether there's a "J," as explained in the chart below.

CORD AND CABLE ABBREVIATIONS

S	Service—Flexible, general-use cord	W, W-A	Weather-approved, indoor/outdoor
J	Junior service, 300V; if there is no "J," it is a 600V cord designed for heavier use	P	Parallel wire construction; designed for air conditioners and household use
T	Thermoplastic/vinyl jacket	HPN	Oil-resistant thermoset, for portable and damp location use
E	Elastomer or thermoplastic elastomer rubber (TPE) jacket	SPT-2, SPT-3	Used for damp locations, not hard usage
O	Oil-resistant cord	AWG	Wire gauge or thickness; AWG-10 handles higher power than AWG-12
OO	Oil-resistant outer jacket and oil-resistant insulation		

Examples: SPT-3 indicates a 600V, general use cord with parallel wire construction, thermoplastic/vinyl jacket, extra-heavy 16/3 indicates 16-ga., 3-conductor (3-prong), as detailed on page 3

NOT SURE WHAT YOU NEED? JUST ASK YOURSELF THE FOLLOWING QUESTIONS.

WHERE WILL THE CORD BE USED?

Indoor and indoor/outdoor cords are made differently. Indoor/outdoor extension cords have a more durable jacket for protection against direct sunlight, moisture, and abrasion. Heavy-duty jackets may also protect against oils, chemicals, or extreme temperatures.

It's safe to use a cord designed for the outdoors inside, but an indoor extension cord could cause overheating or a dangerous short circuit if used outdoors.



WHAT TYPE OF PLUG DOES THE CORD NEED?

Be certain to use an extension cord that works with your device. Most accept 2-prong or 3-prong plugs. A device with a 2-prong plug can be used safely with either a 2- or 3-prong extension cord. If your device has a 3-prong plug, only use it with a 3-prong extension cord, and only plug the cord into a properly grounded 3-hole electrical outlet (receptacle). The 3rd prong and grounded outlet are a safety measure to reduce the risk of electrical shocks and fires.

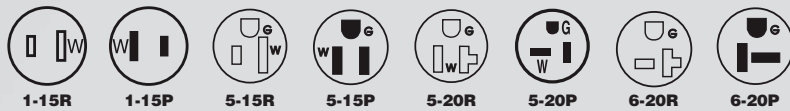
You can use a 15-amp (15A) plug in a 20A connector, but should never alter a 20A plug. Consult the NEMA Plug Configurations chart below to identify your needed plug type.



NEMA Plug Configurations

The National Electrical Manufacturers Association (NEMA) standardized configurations for single-rated devices were created to minimize the possibility of unsafe mating of unmatched voltages and amperages. The standard also defines dimensional requirements to assist users in selection of the proper product for a particular need. Use the figures below to help identify the correct device for your specific application.

Straight Blade Devices



Locking Devices



WHAT ARE THE POWER REQUIREMENTS?

The rule of thumb is to choose an extension cord that can handle more power (amperage, current) than your device requires. If you connect multiple devices, add their current requirements to calculate the maximum amperage of the cord you need. —That's the upper limit the extension cord can safely conduct. If you connect a device that uses more current, it may not work correctly and the cord could overheat.

If your device and the cord both list amp requirements or ratings, the choice of cord is simple. If one or the other lists power requirements in watts, convert to amps with this formula:

$$\text{amps} = \text{watts}/110$$

For example, a 60-watt lamp or light bulb requires 0.55A (60 divided by 110).































Long extension cords require increased conductor size to compensate for voltage drop. Smaller gauge cords are thicker; 10 ga. can handle more amperage than 12 ga. of the same length.

The chart below combines cord length and example device amperage requirements, to indicate what wire gauge you need in an extension cord. Remember to add amperage needs of multiple devices to get the total extension cord amperage requirement.

CORD LENGTH	DEVICE AMPERAGE RATING	MINIMUM WIRE GAUGE
25 Feet	1 to 13A 	16 Gauge (Light Duty)
14 to 15A		14 Gauge (Medium Duty)
16 to 20A		12 Gauge (Heavy Duty) or 10 Gauge (Extra Heavy Duty)

Chart continued on following page.



50 Feet	1 to 13A					16 Gauge (Light Duty)
	14 to 15A					14 Gauge (Medium Duty)
	16 to 20A					12 Gauge (Heavy Duty) or 10 Gauge (Extra Heavy Duty)
100 Feet	1 to 10A					16 Gauge (Light Duty)
	11 to 13A					14 Gauge (Medium Duty)
	14 to 15A					12 Gauge (Heavy Duty)
	16 to 20A					10 Gauge (Extra Heavy Duty)
	150 Feet	1 to 7A				
8 to 10A					12 Gauge (Medium Duty)	
11 to 15A						10 Gauge (Extra Heavy Duty)

Sources: Grainger.com®, Grainger General Catalog
www.homedepot.com/c/factors_to_consider_when_choosing_extension_cords_HT_BG_EL
www.grainger.com/content/qt-electrical-safety-266
www.grainger.com/category/extension-cords-and-outlet-strips/electrical-supplies/electrical/ecatalog/N-qcf?ssf=3&bc=y, www.grainger.com/content/quicktips

Grainger only sells extension cords that meet UL standards and have been tested for foreseeable safety hazards.

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