

Portable Tools: Electric Power Tool Requirements

Department: Chemical and General Safety

Program: Portable Tools

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Authority: ES&H Manual, Chapter 25, Portable Tools

Use of portable electric power tools, such as saws, drills, and grinders, must meet the following requirements, in addition to those found in Portable Tools: Power Tool Requirements.¹

Note Always visually inspect tools before use and remove any found to be defective from service.

General

1. In areas that are wet or in where flammable vapors may be present, use only electrical tools used designed specifically for that purpose.
2. Use only tools that are of an approved, double-insulated type and/or grounded to conform to federal Occupational Safety and Health Administration (OSHA) electrical standards. (See Chapter 8, “Electrical Safety”.²)
3. On construction sites, on temporary wired circuits, or in wet environments use tools only in conjunction with an approved ground fault circuit interrupter (GFCI).
4. Do not power on tools until just before use and power them off immediately afterwards or before changing accessories.
5. Do not get near the moving parts of an electrical tool unless the power is off.
6. When using electric power tools, avoid body contact with grounded surfaces like refrigerators, pipes, and radiators.
7. Do not use any tool that is sparking or appears to have an electrical short.
8. Do not use an electric grinding wheel, buffer, or wire brush that wobbles or vibrates excessively.
9. Do not use excessive force on saws or drills.

Electric Cords

1. Use only approved extension cords that have the proper wire size for the length of cord and power requirements of the electric tool that being used. This will prevent the cord from overheating.
2. For outdoor work, use outdoor extension cords marked “W-A” or “W”.
3. Do not use light-duty power cords.

1 Portable Tools: Power Tool Requirements (SLAC-I-730-0A21S-027), <http://www-group.slac.stanford.edu/esh/eshmanual/references/toolsReqPower.pdf>

2 SLAC Environment, Safety, and Health Manual (SLAC-I-720-0A29Z-001), Chapter 8, “Electrical Safety”, http://www-group.slac.stanford.edu/esh/hazardous_activities/electrical/policies.htm

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4. Do not use any tool with a damaged or exposed cord or exposed wiring.
5. Check cords regularly for fraying, insulation damage, and crushing or cutting.
6. If a power cord feels more than comfortably warm, remove it from service and have it checked by an electrician or other qualified person.
7. Do not lay electrical cords over sharp edges or through doorways or holes in walls.
8. Protect cords from damage by vehicles, being walked on, and so on. Cords should be put in conduits, placed under a cord cover or protected by placing planks on each side of them.
9. Do not lift, lower, or carry tools by their cords.
10. When unplugging a tool, pull the plug, not the cord. Pulling the cord causes wear and may adversely affect the wiring to the plug.
11. Do not plug several power cords into one outlet by using single-to-multiple outlet adapters or converters (*cube taps*).
12. Eliminate *octopus connections*: if more than one receptacle plug is needed, use a power bar or power distribution strip that has an integral power cord and a built-in over-current protection.
13. Do not connect or splice extension cords together to make a longer connection: the resulting extension cord may not be able to provide sufficient current or power safely.
14. Do not tie power cords in knots. Knots can cause short circuits and shocks. Loop the cords or use a twist lock plug.
15. Do not break off the third prong (ground prong) on a plug: replace broken three-prong plugs and make sure the third prong is properly grounded.
16. Do not use extension cords as permanent wiring: use extension cords only as a temporary (for example 30 days) power supply to an area that does not have a power outlet.