



Hand and Power Tools

Talking Points

What are the dangers of using hand and power tools?

These tools can cause many injuries including cuts, abrasions, amputations and puncture wounds. Serious injuries can lead to the loss of eyesight or even death.

Injuries often occur when misusing tools, or when they are not properly maintained. For example, using a screwdriver as a chisel can result in the tip breaking and flying. Some other examples:

- If the wooden handle on a hammer is cracked, splintered, or loose, the head can fly off and strike the worker or any surrounding workers.
- A wrench with sprung jaws might slip and cause hand injuries.
- Impact injuries may occur when tools such as chisels or wedges, have mushroomed heads that shatter upon impact.
- Cracked saw blades and dull knives present hazards from the blade cracking or slipping and striking the worker's body or a fellow employee.
- Falls can also occur due to poor housekeeping. Tools and debris should be cleared and items should not be scattered in work areas or stored in walkways.

What hazards are associated with power tools?

Power tools can pose a greater danger than hand tools. Common injuries involving power tools include cuts, punctures, burns, electrical shock, and damage to one's eyes.

Cuts and punctures occur when machine guards are removed or disengaged, when using the wrong tool for the job, or due to improper maintenance. Other examples include:

- Using the wrong drill bit can result in the bit breaking or the tool slipping. This can cause serious injuries.
- Amputations occur when fingers contact moving machine parts or unguarded points of operation.
- Broken bones, skull fractures and severe bruises can result from tools falling from heights or tossed by careless employees.

What specific hazards exist with electrical power tools?

Electrical shock is one of the main hazards of electrically-powered tools. A small amount of current can stop the heart from beating, cause severe electrical burns, or result in a worker falling off a ladder or other elevated surface. Common causes for shocks include improper grounding of power tools, working too close to power lines, using tools in wet weather, and not replacing damaged power cords. In hot weather, employees operating electrically powered tools should be aware that perspiration is an excellent conductor of electricity.



Cutting into stone can generate silica exposure. What methods exist to eliminate the risk?

Dust collection systems are available for many types of dust-generating equipment. Use local exhaust ventilation to prevent dust from being released into the air. Do not dry sweep. Instead, utilize HEPA vacuums to collect dust. Operating saws that provide water to the blade eliminates the dust hazard.

It is important to keep the dust control systems and equipment in good working condition and perform regular maintenance. It may be necessary to test dust levels in the work area on a regular basis and employees must always follow safe work practices.

What are some common recommended safe work practices for the use of hand and power tools?

Observe the following safety tips when working with hand and power tools:

- 1) Use the right tool for the job. Never use a tool for an unintended use. Operate tools per the manufacturer's instructions.
- 2) Inspect tools before using them. Check handles, blades, power cords, and guarding. If tools are defective, take them out of service until they are repaired or replaced.
- 3) Wear the appropriate personal protective equipment when working with hand and power tools. Wear protective eyewear when handling tools that can project debris and hearing protection when utilizing loud equipment such as hammer drills.
- 4) Practice good housekeeping in the work area. Store tools in a clean and dry area when not in use.
- 5) Never wear jewelry or loose-fitting clothing when using hand and power tools.
- 6) Always keep your tools in top condition, especially drill bits and the blades of cutting tools.
- 7) Make sure electrically driven power tools have GFCI (Ground Fault Circuit Interrupter) protection or are marked as "Double Insulated" to ensure proper grounding or shock protection.
- 8) Never remove or disengage machine guarding.
- 9) Where appropriate, secure work using clamps or a vise to prevent the stock or tool from slipping.
- 10) Sparks from iron or steel hand tools can ignite flammable materials or atmospheres. Spark-resistant tools should be used in these environments.
- 11) Transport tools safely. Don't carry tools such as screwdrivers in pants pockets or carry an electrically powered tool by its cord.
- 12) Never use power tools in wet environments unless they are rated for such use.

