Power Tool Safety for Construction

Power tools can be dangerous. When you misuse or modify them, they can cause injuries ranging from cuts and scrapes to amputations or even death. The good news is that you can follow some basic safety guidelines to avoid these injuries.

Power Tool Hazards
Hand tools and power tools are alike in many ways:

- Present tripping hazards when on walking/working surfaces
- Can fall onto people below when you're working at heights
- Can penetrate underground and embedded cables and pipes
- May cause harm when you misuse or misapply them
- Are safe when you follow precautions

The energy and speed of power tool operation means that these tools are often less forgiving than hand tools when you use them improperly.

Hazards associated with power tools include:

- Cuts, scrapes and punctures
- Moving parts in which loose clothing, hair or fingers can get caught
- Inhalation and projectile hazards. Power saws and grinders can generate large amounts of dust and high-velocity particles can injure eyes and soft tissue. Wearing goggles and a respirator is often recommended

There are unique hazards associated with the type of **power source** used:

- Electric and battery-powered power tools: Even a short exposure to electric shock can cause severe injury, heart failure or even death
- Pneumatic power tools: If the air hose is punctured or cut, it could result in uncontrolled whipping of the hose
- Gasoline power tools: The fuel can cause a fire or explosion

Precautions
All Power Tools

- Never yank the cord or the hose when disconnecting a tool
- Carry the tool by the handle, not the cord or other part
- Keep cords and hoses away from heat, oil or sharp edges
- Disconnect cords when servicing a tool and when you are changing accessories
- Secure your work with clamps and vises
- Keep your fingers away from the switch or button when you are carrying a tool
- Keep tools sharp, clean and well-maintained
- Keep all safety guards in good working order; never detach or disable a guard (do NOT misuse or modify power tools or their guards in ways that conflict with manufacturer recommendations)

Electrical Tools

- Ensure cords are insulated and intact. Do NOT use a tool with a damaged cord

- If a tool is damaged or broken, tag it "out of service"
    - If you will repair the tool, put it in a safe location
    - If you will not repair the tool, properly dispose of it
- Use devices that automatically shut off stray circuits, such as ground fault circuit interrupters (GFCIs)
- Use grounded cords with three intact progs or use double-insulated tools
- Store tools in a dry area
- Wear appropriately rated gloves and protective footwear

Powered Abrasive Wheel Tools

- Perform sound and ring testing before mounting a grinding wheel
    - If the wheel is good, it will have a clear, metallic ring
    - If it sounds cracked or dead, consider it to be dangerous because it could fly apart during operation
    - A safe practice may be to run the equipment for 30 seconds or more to ensure it is mounted properly
- Make sure the wheel or disc is appropriate for the tool size and speed ratings
- Wear eye and face protection

Pneumatic Tools

- Wear hearing, eye and face protection
- Adjust the power to prevent projectiles from over-penetration
- Be in firm contact with the work surface before discharging the tool
- Never point a pneumatic tool toward yourself or others

Cartridge (Powder or Explosive) Tools

- Do NOT use on thin materials such as plywood or drywall
- Never point the tool at yourself or anyone else
- Don't load the tool until you're ready to use it
- Don’t leave a loaded tool unattended
- Wear eye and face protection
- Choose the cartridge needed for the tool and application
- Be in firm contact with the work surface before discharging the tool

NOTE: Because of the danger associated with cartridge tools, some locations may require workers to have a special certification before operating them.

Hydraulic Power Tools

- Hydraulic fluid can cause irritation to the skin and eyes and may be injected into the body where it may kill tissue
- Never use your hands to search for leaks. Instead, use a piece of cardboard or wood
- Before disconnecting lines, be sure to relieve pressure
- Before applying pressure, be sure connections are tight and fittings and hoses are not damaged
- Always use the manufacturer’s recommended safe operating pressures for the hoses, valves, pipes, filters and other fittings