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# Element 3: Using tools

## Overview

You must use hand and power tools correctly and safely in all aspects of the construction industry, and at all worksites and locations. Hand and power tools have improved significantly in recent years, and an increasing range is available for almost every task and for different types of materials.

Improvements in design and technology now make tools and equipment more widely available, less expensive, and generally more reliable with correct use and maintenance. Improved instructions are available from manufacturers and suppliers, and guidelines and codes of practice assist to illustrate correct use and to identify hazards and risks.

Equally important is the need to understand how to maintain tools and equipment and to carry out these tasks in strict accordance with the manufacturer's specifications, and to ensure unsafe or faulty items are identified for repair or disposal and replacement.

## Learning outcomes

You need to demonstrate competency in the following areas:

- Section 3.1 Using hand tools appropriate to the task and materials
- Section 3.2 Using power and pneumatic tools safely and effectively
- Section 3.3 Sharpening and maintaining tools

## Section 3.2: Using power and pneumatic tools safely and effectively

Power and pneumatic tools are designed to make the job easier by providing additional power to the task – often a great deal more! As a result, while the job may be easier and require less manual effort, it also has the potential to be more dangerous unless the power is correctly controlled.

You may use many different power and pneumatic tools in your work with distinct safety and environmental requirements.

Here are some tips for using different tools on worksites.

### Tips

- Carry out a JSA to identify the hazards, the risk of harm and suitable methods for safe working practices.
- Ensure you are familiar with the correct purpose and use of the power tools including portable, electrical, pneumatic and gas-driven tools. If in doubt, ask for assistance and supervised practice to ensure you can use the power tools correctly.
- Check if a licence or formal training is required to operate the tool such as the older types of powder-operated nail guns.
- Follow the manufacturer's recommendations for use, including the capacity to do the required work. Avoid burning out tools by overloading them or using them for longer periods of time than is recommended.
- Follow the OHS recommendations by the manufacturer and also by the relevant workplace safety authorities, including eye and hearing protection for all those workers affected by the use of the tool, such as an assistant holding the material.
- Plug electrical tools into socket outlets that are protected by a residual current device or use a portable current device such as a safety switch.
- Ensure attachments to pneumatic tools are firmly attached and never pointed at others.

Safety is critical, particularly with tools powered by electricity that can quickly kill a person or cause serious injury. Each state and territory has clear guidelines and regulations for power tools. For example, the Northern Territory requires that electrical installations on construction sites must comply with Australian Standard 3012 Electrical installations – construction and demolition sites, and all hand held and portable power tools must be connected through a residual current device (RCD) or earth leakage protection at all times.



Similarly, a hazard alert (developed by Worksafe South Australia) advises employers, contractors and self-employed people about the safety issues when using air guns. This alert warns about the use of burp fire nail guns, where operators can get into the habit of carrying the air gun with the trigger depressed, which means the tool can accidentally discharge if bumped causing injury.

## Find out more

Resource	Why it is useful
NTWorkSafe <i>Electrical Safety – Construction</i> <a href="http://www.worksafe.nt.gov.au/corporate/bulletins/pdf/01-05/05.02.01.pdf">www.worksafe.nt.gov.au/corporate/bulletins/pdf/01-05/05.02.01.pdf</a>	This bulletin from WorkSafe in the Northern Territory provides information relating to the use of electrical equipment on construction sites.
Australian Training Products <i>Carpentry and joinery: portable power tools</i> <a href="http://www.atpl.net.au/data/sample/pdf/atpsample_5443.pdf">www.atpl.net.au/data/sample/pdf/atpsample_5443.pdf</a>	This handbook provides information and illustrations on portable power tools.

### Section task 3.2

Imagine you have been asked to cut a panel from a cement sheet, using an electric hand-held power saw. Write one paragraph to answer the following questions.

1. How would you ensure the job is done safely and correctly, without injury and without damage to the power saw?
2. Why is it more dangerous when using a multi-cutter blade?

## In ACTION

### Graham's story

One of Graham's tasks is to maintain the tools and equipment used in his job as a bricklayer. This includes hand tools such as cold chisels, hammers, pliers, spirit levels, bolster, trowels, square edge, tape measure, string and pins. Power tools include timber and masonry saws, angle grinder, electrical drill (for timber and masonry) as well as an air compressor for washing down walls and floors.

Graham knows concrete is very hard to remove once it dries. He makes sure tools are cleaned as quickly as possible, even several times during the day if necessary. This also assists in the accuracy and appearance of his work because blobs of concrete are not attached to the spirit level when taking measures and trowels don't cause grooves and marks when trowelling off.

At the end of each day, Graham retouches the edges of tools, such as chisels, and removes any built-up mushroom tops. He also removes any built-up concrete from the handles of tools for a more comfortable and secure grip (and a little less weight or imbalance).

Power tools are always checked in strict accordance with the manufacturer's recommendations and any faults that Graham can't fix are referred to the supervisor for action. Graham ensures the tool or piece of equipment is fully disconnected before regular maintenance such as changing blades, adding lubricant or checking brushes. Graham also makes sure he and his co-workers always wear the appropriate personal protective equipment and gear.



## Revision

- Hand tools need to be selected according to the task and the materials involved.
- Power and pneumatic tools are designed to perform specific functions. They are generally more complex than hand tools, provide greater power with less effort and often require instruction and supervised practice.
- A clear understanding of the manufacturers' recommendations for use and maintenance of each type of tool is strongly advised.
- Both hand and power tools have the capacity to injure people and to damage property and equipment.
- Where specific regulations and codes of practice exist, these must be followed. These may be similar or additional to the recommendations of the manufacturer, and to the OHS policies of the particular workplace.
- Tools and equipment will last longer, do the job better, and reduce the risk of injury and/or damage when they are correctly maintained and sharpened according to the recommendations of the manufacturer and the particular workplace guidelines.

## **Are you ready?**

Use this checklist to assess if you are ready for assessment activity 3.

I understand how to:

- ☐ Use hand tools appropriate to the task and materials
- ☐ Use power and pneumatic tools safely and effectively
- ☐ Sharpen and maintain tools

## Assessment activity 3

### Using tools

The following table maps the assessment activity for this chapter against the element and performance criteria of Element 3 in *CPCCCM2005A Use construction tools and equipment*. The activity has been designed for all learners to complete.

Part	Element	Performance criteria
Whole activity	3	All

Complete the following table. The first one has been completed for you as an example.

Power tool / equipment	Advice for safe use	Required maintenance
Power saw (portable/table saw)	Check: <ul style="list-style-type: none"> <li>• leads</li> <li>• blade is correct and fitted</li> <li>• safety guard is in place</li> <li>• work is firmly secured</li> <li>• correct PPE issued</li> <li>• work area is clear</li> </ul>	Replace unsafe leads. Replace work blades. Clean off sawdust, resin, etc. Keep parts lubricated. Check operation of bearings. Check for electrical or structural damage, loose fittings, operation of guards.
Electric plane		
Impact power drill		
Nail gun		
Impact hammer		

### Record your employability skills

When you have completed the assessment activity, make sure you record the employability skills you have developed in the table at the end of the workbook. Keep copies of material you have prepared as further evidence of your skills.



# Employability skills

In the table below, describe the activities you have undertaken that demonstrate how you developed the following employability skills as you worked through this unit. Keep copies of material you have prepared as further evidence of your skills.

Alternatively, prepare a table similar to the following table.

<b>Employability skills</b>	<b>The activities undertaken to develop the employability skill</b>
<b>Communication</b>	
<b>Teamwork</b>	
<b>Planning and organising</b>	
<b>Initiative and enterprise</b>	
<b>Problem-solving</b>	
<b>Self-management</b>	
<b>Technology</b>	
<b>Learning</b>	