



Use construction tools and equipment

CPCCCM2005B

- Information includes:
 - Diagrams or sketches
 - Instructions issued by authorised organisational or external personnel
 - Manufacturer specifications and instructions where specified
 - Safety data sheets (SDS)
 - Memos
 - Organisation work specifications and requirements
 - Plans and specifications
 - Regulatory and legislative requirements pertaining to using construction tools and equipment; relevant Australian standards
 - Safe work procedures related to using construction tools and equipment.

- Planning and preparation includes:
 - Work site inspection
 - Equipment defect identification
 - Assessment of conditions and hazards
 - Determination of work requirements



- Regulatory and legislation requirements applicable to this unit of competency may be found in:
 - Work Health and Safety Act 2011
 - Work Health and Safety Regulation 2011
 - Electrical Safety Act 2002
 - Electrical Safety Regulation 2002
 - Environmental Protection Act 1994
 - Aboriginal Cultural Heritage Act 2003



- Guidance Documents

- As a construction worker you should make yourself familiar with and apply any guidance requirements to your relevant work area.

- Manufacturer specifications and instructions

- Manufacturer guidelines and specifications must always be followed.
 - By law these must be made available/provided at the point of sale by the manufacturer.
 - Manufacturer guidelines and specifications can be available for anything on site, but most likely for materials, tools, equipment, heavy machinery, hazardous substances etc.



- Other workplace and organisational requirements
 - Ensure that you understand and comply with any organisational policies, procedures and requirements which apply to your position.
- Work instructions
 - Before commencing any job, you will need to receive specific work instructions.
 - These are often presented to employees in the form of a Works Order.
 - All safety requirements for the tasks you have been asked to do should be written down in the Job Safety Analysis (JSA) or Safe Work Method Statement (SWMS) for the job.

- The main types of plans and drawings used in the industry may include:
 - Site plans
 - Locality plans
 - Cross sectional plans
 - Longitudinal plans
 - Drawings
 - Specifications
 - Illustrations
 - Dimensions and notes
 - Structural detail and specification providing illustrations and dimensions and project plans



- Check amendments to specifications to ensure currency of information. Specifications may include:
 - Materials and quality of work
 - Quality assurance
 - Nominated sub-contractors
 - Provision of site access/facilities
 - Details relating to performance including:
 - Standards of work
 - Tolerances
 - Material types
 - Characteristics
 - Treatments and finishes



- A Safe Operating Procedure (SOP) is a set of step by step instructions for carrying out a specific technique provided by the workplace.
- The SOP represents how the organisation wants the plant/equipment to be operated.
- When an SOP accompanies plant/equipment, the instructions must be complied with.



- A Safety Data Sheet (SDS) is a document containing important information about a hazardous chemical (which may be a hazardous substance and/or dangerous good).



- What does the WHS Regulation 2011 set out the requirements of a Supplier to do?
- What does the WHS Regulation 2011 set out the requirements of a PCBU to do?

- Emergency procedures related to equipment operation, including emergency shutdown and stopping, extinguishing fires, organisational first aid requirements and evacuation
- Handling of materials
- Hazard control
- Hazardous materials and substances
- Safe operating procedures



- Organisational first aid
- Personal protective clothing and equipment prescribed under legislation, regulations and workplace policies and practices
- Use of firefighting equipment
- Use of tools and equipment
- Workplace environment and safety



- The main objective of this Act is to provide for a balanced and nationally consistent framework to secure the health and safety of workers and workplaces.
- Administration of the Act
 - In each state and territory the Minister of Industrial Relations is responsible for the administration of the Act whilst the legislation is administered by the relevant Attorney General's department.

- The WHS Regulation specifies the way in which a duty under the WHS Act must be performed and prescribes procedural or administrative matters to support the WHS Act.
- Understanding the Work Health and Safety Act 2011
 - The WHS Act 2011 provides for administration and enforcement of health and safety by placing certain duties on a range of workplace parties.
- These include what?



- 'Duty of care' is a common law term used to describe how a person may have responsibilities to the safety and wellbeing of another person.
- What is 'reasonably practicable' in ensuring health and safety?
 - Duty of care Parties:
 - PCBU
 - Officers
 - Workers
 - Others



- According to the Work Health and Safety Act 2011 (section 35-39) a PCBU must notify the relevant state regulator as soon as they become aware of any of the following incidents:
 - The death of a person; or
 - A serious injury or illness of a person; or
 - A dangerous incident.



- The WHS Regulation 2011 (section 81) states that a person must not carry out a class of high risk work unless the person holds a high risk work licence for that class of high risk work, except as provided in section 82.
- What does High Risk Work include?



- A PCBU has the primary duty under the WHS Act to ensure, so far as is reasonably practicable, that workers and other persons are not exposed to health and safety risks arising from the business or undertaking.
- This duty includes ensuring, so far as is reasonably practicable:
 - The provision and maintenance of safe plant, and
 - The safe use, handling, storage and transport of plant.

- Under the WHS Act 2011 workers have a duty to take reasonable care for their own health and safety and must not adversely affect the health and safety of other persons.
- Workers must comply with any reasonable instruction and cooperate with any reasonable policy or procedure relating to health and safety at the workplace.



- A WHS management [safety] plan sets out the arrangements to manage work health and safety on a construction project.
 - Refer to Regulation 310 WHS management plan - duty to inform
- The principal contractor for a construction project must ensure, so far as is reasonably practicable, that each person who is to carry out construction work in connection with the project is, before commencing work, made aware of:
 - The content of the WHS management plan for the workplace; and
 - The person's right to inspect the WHS management plan under section 313.

- Safe work method statements (SWMS) assist a PCBU to consider how certain activities will be carried out safely.
- The Work Health and Safety Regulation (2011) states that where a PCBU is required to carry out high risk construction work, a safe work method statement must be prepared, or have already been prepared by another person, for the proposed work before that work commences.



- According to the WHS Regulation 2011 (R203) a person with management or control of plant at a workplace must manage risks to health and safety associated with the plant.
 - Identify the hazards
 - Inspect the plant
 - Hazard checklist
 - Review safety information
 - Review incident records and data



- Risk is the likelihood that death, injury or illness might result because of the hazard.
- To assess risk, you need to consider both likelihood and consequences.
 - The desired outcome of this step is a prioritised list of risks for further action.
- Consider:
 - What is the potential impact of the hazard?
 - How likely is the hazard to cause harm?
 - Hazard Control Measures

• Example risk assessment prioritisation:

Extreme **High** **Medium** **Low**

Consequences

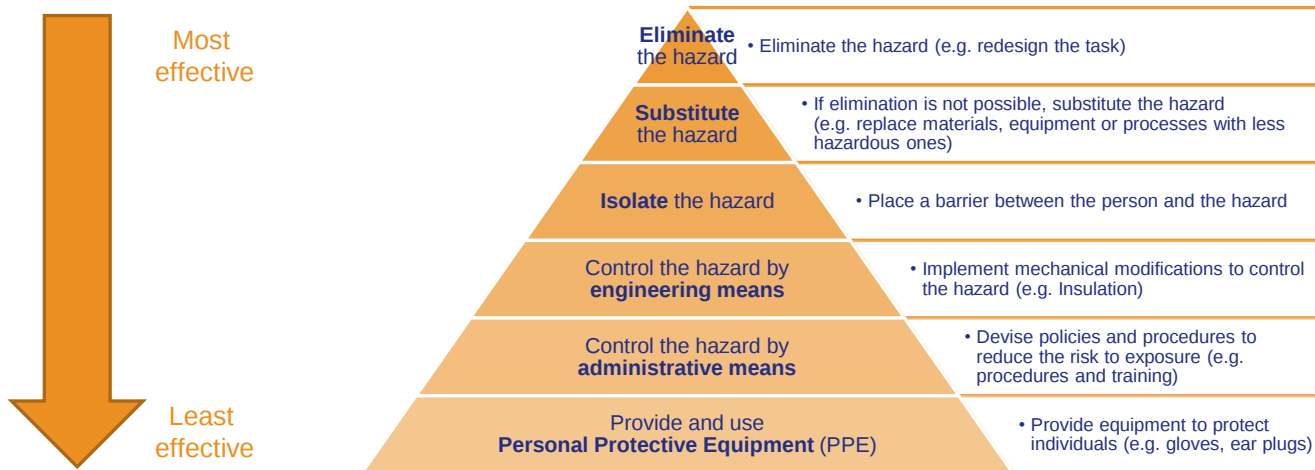
A: Death or Permanent Disability
B: Serious Injury
C: Lost Time Injury
D: Casualty Treatment
E: First Aid

Likelihood

1: Very Likely
2: Likely
3: Possible
4: Unlikely
5: Very Unlikely

Matrix	A	B	C	D	E
1	E	E	H	H	M
2	E	H	H	M	M
3	H	H	M	M	L
4	H	M	M	L	L
5	M	M	L	L	L

- The hierarchy of control gives priority to the order in which hazard and risk controls should be implemented.



- You must take extreme precautions to ensure that damage to existing structures, underground and overhead services is avoided.
 - It is important to remember that not all works or services are detailed on the site plans.



- Accidentally digging into a service such as a gas pipe, power line or optic fibre communication lines can be an expensive mistake and can result in a hazardous situation or, in extreme circumstances, injuries or fatalities.
- It can also result in extreme disruption to the residents and businesses in the area.

- Industry signage and barricades will be used as part of a health and safety hazard strategy.
- This is a systematic process of eliminating or reducing the risk to personnel and property through the application of controls.
 - Regulatory signs
 - Hazard signs
 - Emergency signs
 - Fire signs



- As with all equipment, hand tools deteriorate over time with continued use and misuse.
- Some of them do not grip as well as they once did and others may require constant adjustments when in use.
- Their markings may become so worn and blurred that it is difficult to identify them.
- They may develop worn and broken heads or become dulled from incorrect use.



- It is also essential that that plant, power tools and equipment are checked for serviceability, and any faults are rectified or reported prior to commencement.
- This requires you to follow all workplace protocols for rectification and reporting applicable to your organisation.
- Frequency of inspection and tests for electrical equipment.

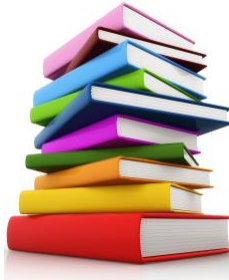


- Are RCDs (safety switches) fitted?
 - All final sub-circuits of construction wiring must be protected by 30mA Residual Current Devices (RCDs).
- Are flexible extension leads being used safely?
 - Check that leads are not lying in mud or water or in areas where they can be damaged or become tripping hazards.
- Are the correct type of socket outlets being used?
 - Check that only 230 volt 10 ampere sockets with double pole switches are used on relocatable structures and sockets outlets supplying portable electrical equipment.

- Are portable outlet devices suitable?
 - Double adaptors, three-pin plug ('piggy back') adaptors and other types of domestic multi-plug power boards are not permitted for construction work and must not be used.
- Are electrical tools and flexible extension leads in a safe condition?
 - Ensure that extension leads and power tools brought onsite are suitable and in good condition.

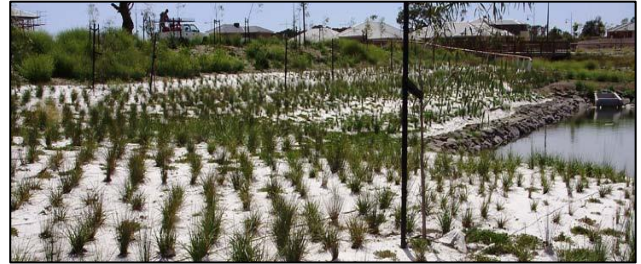


- Quality Assurance refers to the planning and organization of activities, the objective of which is to ensure that the finished product meets predetermined quality standards.
- Standards are set, and quality assurance is put in place to ensure that the objectives are conducted correctly and in a safe manner.



- Environmental requirements include:

- Clean up protection;
- Noise and dust;
- Vibration;
- Waste management.



- To determine environmental requirements you will need to access and consider the Environmental Management Plan (EMP) relevant to the particular project.
- An EMP is a site or project specific plan developed to ensure that appropriate environmental management practices are followed during a project's construction and/or operation.

• General Hand Tools

- Spanners
- Pliers
- Hammers
- Screwdrivers
- Chisels
- Files



- Cutting and Demolition Tools

- Pinch or Wrecking Bars
- Bolt Cutters
- Tin Snips
- Nippers
- Pincers



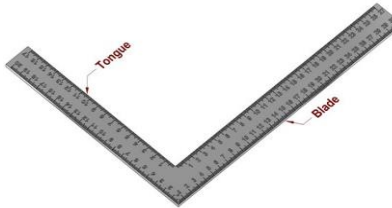
- Excavation Tools

- Mattock
- Pick
- Crow Bar / Spud Bar
- Shovels



- Measuring Tools

- Tape
- Steel Square
- Spirit Level



- Securing/Clamping Tools

- Clamp



- Cutting tools

- Handsaw
- Hacksaw



- Cut-off Saws
- Drills & Drill Bits
- Angle Grinders
- Impact Wrench
- Planers



- Sanders
- Nail Guns & Safety
- Kango Hammers
- Concrete Saws
- Circular Saws & Saw Blades
- Avoid Kick Back



- Ensure WHS requirements for using hand, power and pneumatic tools are recognised and adhered to.



- Fuel and Lubricants

- For any small plant/ equipment you are required to operate you will be required to select fuel and lubricants and to check and adjust fuel, oil, hydraulic fluid and water levels as part of your preoperational checks.

- Fuel

- Fuel is any material that stores energy that can later be extracted to perform mechanical work in a controlled manner.
 - Petrol
 - Diesel
 - Liquid Petroleum Gas (LPG)
 - Fuel Cleanliness



• Lubricants

- A lubricant is a substance introduced to reduce friction between moving surfaces. It may also have the function of transporting foreign particles.



• Hydraulic Fluid

- Hydraulic fluids, also called hydraulic liquids, are the medium by which power is transferred in hydraulic machinery.
- Common hydraulic fluids are based on mineral oil or water.
- Examples of equipment that might use hydraulic fluids include excavators and backhoes, hydraulic brakes, power steering systems, transmissions, garbage trucks, aircraft flight control systems, lifts, and industrial machinery.



• Water

- Water cooling is a method of heat removal from components and industrial equipment. As opposed to air cooling, water is used as the heat conductor.
- The main mechanism for water cooling is convective heat transfer.
- Convective heat transfer, often referred to simply as convection, is the transfer of heat from one place to another by the movement of fluids.
- Convection is usually the dominant form of heat transfer in liquids and gases.



- Many skills related to the proper use and care of hand tools require one-on-one instruction and repetitive use over time to develop.
- It can be safely assumed that there are hand tools identified in this presentation which you have never used.
- Even those that you are familiar with, you may still doubt your skills.
- Do not assume that you are alone, even workers with a long working history may have developed poor work practices with regard to the use of hand tools.

- Safe use of hand tools
 - Always remember that there are four basic rules for hand tool safety:
 - Select the right tool for the right job.
 - Keep tools in good condition.
 - Use tools properly.
 - Keep tools in a safe place.



- Operating the plant/equipment requires you to adhere to any relevant workplace instructions as well as any manufacturer instructions.
- Relevant workplace instructions will include Standard Operating Procedures (SOPs).
- Identify if there are any relevant SOPs available for the plant/equipment you are required to operate.
 - Manufacturer's Operator Instructions
 - General Operator Instructions
 - Specific Operator Instructions
 - Sharpen and Maintain Tools



• Plant

- Generator
- Generator maintenance
- Air compressor
- Air compressor safety



- Equipment

- Power Leads
- Safety Switch
- Air Line Hoses and Connections



- Cleaning up correctly is just as important as any other task involved in construction.
- Cleaning up means all debris and waste materials must be collected and removed to the waste storage area and sorted for recycling.
- Unused materials must be returned to the storage area and stacked or stored neatly.
- The work area must be left clean, safe and secure on completion of the task.



- You should follow any organisational protocols when managing tools and equipment.
- Maintenance of tools:
 - Hand tools
 - Power tools
 - Power leads / hoses
 - Locate hand tools
 - Safely locate power tools

