

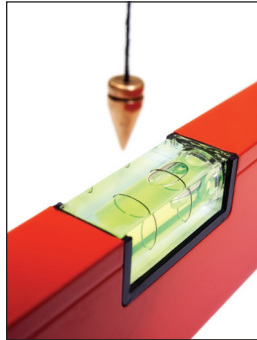
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## Section 1.4: Selecting and checking the required tools and equipment

In order to select the right tools for the job, it is necessary to first understand exactly what the job involves. There are tools and equipment that apply to most jobs, though some have been designed specifically for specialist areas in carpentry, brickwork, plastering and plumbing. Their correct use and maintenance is important. Understanding the requirements for each stage of a job will assist in identifying the required plant, tools and equipment, and ensuring they are available when required.



There are tools and equipment used in waterproofing to measure dimensions, take levels, take moisture readings, clean and prepare surfaces, mix and apply preparations and provide adequate heating, lighting and air circulation. Measuring tapes, mixers, moisture meters, levels and straight edges are essential tools for the waterproofing tradesperson.

### Basic rules to apply

Before using tools, there are some procedures you can follow that contribute to a safe, efficient job:

1. Selecting the right tool for the job makes the work easier and reduces safety risks; for example, don't use a chisel as a screwdriver. Similarly, select the tool that has the capacity for the task within the manufacturers' specifications and use only authorised attachments.
2. Check that tools are in a serviceable condition and are suitably accurate. Repair only those within your capacity and training; otherwise notify the supervisor and use suitable replacements.
3. Check power tools for faults. Look for worn, cracked or frayed electrical leads or air hoses; incorrect selection and/or fitting of blades/discs for different power saws or angle grinding work; missing or loose safety guards; inadequate lubrication; or incorrect attachment to any pneumatic power sources.
4. Follow the manufacturer's specifications and/or workplace practices in the use of the correct PPE or tool use.

## Find out more

Resource	Why it is useful
PCWI Precision Instruments <i>Moisture meter range</i> <a href="http://www.pcwi.com.au/Moisture-Meters-Range.asp">www.pcwi.com.au/Moisture-Meters-Range.asp</a>	This web page provides examples of moisture meters, which are essential tools in waterproofing.
Department of Commerce (WA) <i>3. Electrical safety</i> <a href="http://www.commerce.wa.gov.au/worksafe/Content/Industries">www.commerce.wa.gov.au/worksafe/Content/Industries</a> Click on <b>Agriculture, forestry and fishing</b> , then click on <b>Agriculture workbook</b> on the left-hand menu. Finally, click on <b>Electrical safety</b> .	This web page highlights the importance of checking electrical equipment and power tools before using them.

### Section task 1.4

Briefly outline the uses of the following items in waterproofing and any important points to note; for example, safety, accuracy, quality.

Type of tool/equipment	Function/s	Important points to note
Angle grinder (masonry blade)	To remove upstarts in concrete structures	Must be free of cracks and chips
Measuring tapes and rules		
Mixer and mixing apparatus		
Moisture meters		
Spirit level, straight edge		
Brushes, rollers		
Cutting blades		
Dumpy/laser/water levels		
Evacuating equipment and pumps		
Rollers, scissors		
Vacuum cleaner		
Caulking gun		

## **In ACTION**

### **Dimitri's story**

Dimitri is keen to ensure the shower area in the bathroom of the house under construction will be correctly waterproofed. He is aware that the local council will require certification by a qualified waterproofer – his certification – that the work has been completed to standard.

Dimitri familiarises himself with the plans and specifications to identify the particulars of the required waterproofing system. He is already aware of what is required by the Australian Standards and the Building Code relating to showers and bathrooms.



The shower recess is pre-formed to Australian Standards. The bathroom floor is to be tiled, and will drain to an outlet in the floor. Additional checks are made to verify the necessary slope for drainage to the outlet.

According to the plans and specifications, a liquid-based application of elastomeric membranes will be used in the shower recess and bathroom as this is the most appropriate membrane for this type of structure. Dimitri is careful to check the various components of the waterproofing system to satisfy himself that they will be compatible; later he'll select bond-breakers, adhesives, reinforcing tape and other materials.

Dimitri's company has a very good reputation for quality workmanship. He knows that poor detailing is a major fault in waterproofing and plans carefully to ensure there will be no moisture escapes.

He measures the area to be waterproofed prior to making his material calculations. He allows for turn-ups, provision for the sealing penetrations, repeat coats as advised by the manufacturer and an allowance factor for wastage. Dimitri also makes allowances for getting the membrane thickness right.

The last thing he does is check with the project supervisor to confirm that he'll be able to start work when the other tradespeople have finished.

## **Revision**

- Effective waterproofing is based on understanding the general principles of the process and the careful customisation of these for each circumstance.
- Poor waterproofing is a major problem in building and construction, and the practice is increasingly subject to formal compliance requirements.
- The plans and specifications of each area for waterproofing need to be clearly identified and clarified, to verify the selection and application of the most appropriate waterproofing system.
- Practices and principles for waterproofing of internal and external wet areas are documented in Australian Standards and the Building Code of Australia, local council requirements, and the professional advice of manufacturers and suppliers. The process and its appropriateness need to be confirmed as conforming to all requirements, including structural elements.
- Typical water intrusion problems may occur through inadequate detailing, inappropriate material choice or incompatibility of materials.

- The preferred method of installation, whether liquid-based, sheet or injection, will depend on the local situation. Effective waterproofing also relies on awareness of the measures for preparation of surfaces and adhesion qualities of materials.
- In addition to Australian Standards and the Building Code of Australia, manufacturers' recommendations are essential sources of advice. It is critical that:
  - the most appropriate system is selected
  - all of the components are compatible
  - manufacturers' recommendations are followed during all stages of surface preparation, material preparation, installation of components and application of the membrane.
- Errors in installing the waterproofing commonly occur through:
  - lack of attention to substrate preparation, thus reducing the effectiveness of primers and adhesives
  - inappropriate or inadequate installation of bond-breakers, which risks breakage of the membrane because of excessive stress
  - poor terminations, allowing entry of water
  - uneven or inadequate membrane thickness
  - failure to allow sufficient curing time.

Awareness of these potential problems during planning reduces risks to the effectiveness of the waterproofing system.

## **Are you ready?**

Use this checklist to assess if you are ready for assessment activity 2.

I understand how to:

- ☐ Examine plans and specifications for work area identification, product description and the performance and design requirements
- ☐ Visit the worksite and confirm work requirements
- ☐ Identify the waterproof process
- ☐ Identify practices and principles of waterproof design for construction of wet areas
- ☐ Determine the appropriateness of the waterproofing system in relation to structural elements
- ☐ Identify the potential for and consequence of water penetration and methods of water exclusion
- ☐ Identify the method of waterproofing installation
- ☐ Confirm the suitability, conformity and compatibility of waterproofing materials
- ☐ Identify the application of bond-breaker/fillet system as fit for purpose
- ☐ Identify potential faults, and contingencies and techniques to address them

# Final assessment

To be assessed as competent in *CPCCWP2003A Prepare for construction waterproofing process*, you must provide evidence of:

- the underpinning skills and knowledge
- relevant legislation and workplace procedures
- other relevant aspects of the range statement.

## Assessment mapping

The following table maps this final assessment activity against the elements and performance criteria of *CPCCWP2003A Prepare for construction waterproofing process*.

Part	Element	Performance criteria
A	All	All
B	All	All
C	All	All

For detailed mapping of this workbook against the methods of assessment, the elements, the performance criteria and required skills and knowledge, refer to the *Aspire Trainer's and assessor's guide* for this unit.

The following activity has been designed for all learners to complete.

## Part A: Demonstrating essential skills

Your trainer or assessor needs to **observe** you demonstrating the following essential skills in your workplace or in a simulated environment.

### Essential skills

Demonstrate to your trainer or assessor how you:

- use communication skills to:
  - follow instructions
  - read and interpret documentation from a variety of sources, and drawings and specifications
  - recognise procedures
  - report faults
  - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
  - use language and concepts appropriate to cultural differences
  - use and interpret nonverbal communication such as hand signals

*continued ...*

... continued

### Essential skills

- use written skills to record results of checks and tests and relevant work completion procedures
- evaluate own actions and make judgments about performance and necessary improvements
- identify and accurately report to appropriate personnel any faults in tools, equipment or materials
- use organisational skills, including the ability to plan and set out work
- respond to change and contribute to workplace responsibilities, such as current worksite environmental and sustainability frameworks and management systems
- use teamwork skills to work with others to action tasks and relate to people from a range of cultural and ethnic backgrounds and with varying physical and mental abilities
- use technological skills to use a range of mobile technology such as two-way radio and mobile phones
- use voice and hand signals to access and understand site-specific instructions.

## Part B: Presenting your portfolio

By completing and collecting the practice tasks and assessment activities in this workbook, you have now gathered a variety of documents, reports and other information relevant to this competency.

Present this portfolio of evidence to your trainer or assessor.

## Part C: Essential knowledge

1. Before starting on a waterproofing job, what resources would you use to determine the precise requirements of the waterproofing task to be carried out?
2. a) List the OHS requirements that apply to you in your workplace (specify the type of work you are required to perform).  
b) Explain the purpose of a job safety analysis/safe work method statement.  
c) What information on a MSDS would be useful for OHS purposes?
3. What are the general recommendations to follow if you are to use plant, tools and equipment safely and effectively? (Provide examples of how these are applied in your workplace, including appropriate PPE.)
4. Give three examples of how to communicate effectively with your fellow work team members.
5. What are the possible consequences of water leaks and where may these occur in a residence?
6. Briefly describe the liquid and sheet forms of waterproofing and the processes you have used in their application.
7. Put the following stages of the preparation for waterproofing into their usual/correct sequence:
  - a) application of primer to substrate surface
  - b) confirmation of specifications and regulation requirements