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Element 1:

Identifying work area requirements

Overview

Workers undertaking any work at height must understand all the safety requirements that govern how they should carry out their work. Safety requirements are governed by a variety of legislation, regulations and acts and may vary from state to state. Workers must have access to the relevant documents and material to make informed decisions about how to commence work in a manner that minimises or eliminates risk to self and others.

As construction jobs vary widely workers need instructions on safety aspects that cater for site specific conditions. Much of the required information can be gained from supervisors; however, work orders, manufacturer's instruction sheets, industry codes of practice and regulations are alternative sources of information.

When carrying out any task at height it is a common requirement to use specialised fall protection equipment. This equipment needs to comply with safety regulations and all workers need to know the correct way to fit and adjust it. Work instructions are developed around tasks that need to be completed on-site and the necessary safety equipment that is required when carrying out these tasks. Safety equipment requirements are also developed to ensure tools and equipment do not drop from height. There are safe methods of moving tools and equipment that need to be followed. Thorough planning of worksite practices helps to minimise risk of injury to workers when working at heights.

Learning outcomes

You need to demonstrate competency in the following areas:

- 1.1 Identifying site of proposed work
- 1.2 Identifying method of access
- 1.3 Identifying tasks
- 1.4 Identifying required fall protection equipment
- 1.5 Moving tools and equipment to work area



Section 1.2: Identifying method of access

Once work requirements have been established the next step is to identify the safest method of accessing the work area. Falling from a height is one of the most serious accidents that can happen on a construction-site and is often the cause of serious injury or death. Correct access to the work area minimises the risks and ensures the safety of all workers.

It is efficient and safer to invest the time and resources to identify access methods prior to commencing the task. It is too late once the worker is in position to find out that they cannot move adequately to safely complete the job or cannot get down from the position.






The method of access to the worksite depends on the kind of structure being worked on and the type of movement required to complete the task; for example, will the worker be required to work across the surface area of a structure or can they complete the task from a fixed position.

The following table outlines some common access equipment and how they are used.

Equipment	Description	Image
Work platform	Provides a temporary or permanent structure from which to work. The working platform must be designed to safely support the people who may be working on it as well as any tools and equipment that will also be required at the work area. The surface should be non-slip, clear of trip hazards and as flat as possible. A work platform is suitable where the worker must have access and mobility along a length of the structure's surface; for example, the exterior surface of a multi-storey building.	
Elevated work platform (EWP)	There are different types of EWPs; for example, boom type, scissor lifts and vertical mast. EWPs are designed to lift or lower workers and equipment to a work area by means of a powered telescoping device, scissor action or articulated device. They have a base support that is mobile and contains the controls for lifting and lowering. Suitable where the worker must have access to specific areas on a structure. Does not allow for unrestricted movement across the structures surface; however, can be adjusted to enable work progression.	

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Equipment	Description	Image
Forklift truck	Must be used on flat, level surfaces; for example, concrete flooring, to ensure the stability of the truck.	
Scaffolding	Scaffolding provides a temporary surface from which to work. Scaffolding comes in a variety of strengths to cater for different tasks.	
Ladders	These should be pitched at an angle of one horizontal to four vertical. The ladder should be secured to prevent movement and protrude at least 900 mm above the structure. They should be positioned on a firm, level non-slip surface. If a series of ladders is required to access a work area there should be a landing provided at every 6 m and fall protection equipment will need to be installed. Portable ladders should never be used on work platforms.	
Forklift work platforms	Forklift work platforms are specifically designed and attached to the elevating device of a high lift fork-truck. They are often cages that may or may not have access doors to enable safe loading of equipment and personnel. The cages prevent both equipment and workers falling and are designed to take varying weights and loads. Some manufacturers will specify different cages for different materials; for example, welded cages for lifting bricks.	
Industrial rope access systems	There is a work positioning harness or seat attached to one of the ropes and a fall-arrest harness attached to the other. This system is inappropriate to use to transport larger tools and equipment and simply provides access for the worker to a site where small hand-held equipment is required.	

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This equipment must conform to Australian Safety Standards, such as:

- AS 1657 Fixed Platforms, Walkways, Stairways and Ladders – Design, Construction and Installation
- AS 1576 Scaffolding
- AS 4576 Guidelines for Scaffolding

Section 1.5: Moving tools and equipment to work area

Moving materials and equipment on a construction-site always involves a certain amount of risk, especially when having to do so at heights. It is important that methods of moving tools and equipment to the work area minimise the risk involved. This may mean minimising the potential of falling objects, minimising the removal of scaffold components, minimising inappropriate carrying of materials on ladders, and minimising excessive bending and twisting in pass-up situations.

Employees will save time and minimise the risk of injury by identifying the most appropriate method of moving tools and equipment, which will involve consideration of the following three factors:

- the employees' safety (at site and protection from falling objects in nearby areas)
- what needs to be moved (weight, stability)
- where the object/s need to be moved to (to a level work surface or be temporarily suspended, or included as part of the structure).

It is important to consider the risk of objects falling during the move so careful choice of transport and securing methods is essential. The following are examples of approved methods for safely moving items while working at heights.

- Cranes or forklifts: these must have approved attachments such as a crane and forklift goods cage or a welded brick cage. These cages can be used to safely move objects and to keep them contained so they don't fall. They can be attached to cranes or forklifts and can hold a variety of materials. The weight of items should always be calculated prior to lifting so as not to create instability.
- Electronic or pneumatic lift devices: these may be fitted with gripper tools.
- Goods hoists: these take up some floor area but are useful for multi-storey applications. They can be fitted with a conveyer system to further assist unloading and distribution of goods.

Find out more

Resource	Why it is useful
Material Handling <i>Cages and platforms</i> www.materialshandling.com.au/c-271-cages-platforms.aspx	This web page provides examples of cages and platforms that can be used when working at heights.

Section task 1.5

1. List the three factors that must be considered when identifying the most appropriate method to move tools and equipment when working at heights.
2. Describe the three unsafe work practices that are minimised or almost eliminated through using approved methods of moving tools and equipment to sites at heights.

In ACTION

Christian's story

A major Australian steel manufacturing company advertised tenders for the replacement of the roof to their existing plant located in Melbourne.

Christian works for the company that won the tender to replace the existing roof and has reported to site to commence work. Upon arrival Christian ensures he is wearing the appropriate personal protective equipment (PPE) and proceeds to meet the site manager who asks him to stay with the group to prepare for the briefing.

The manager briefs the entire group of workers at the same time explaining the tasks each group are to work on and how the tasks are to be undertaken. Christian makes note that this time they are going to be using a suspended frame from which they will gain access to the roof. They will remove segments of the roof by attaching it to the frame and lowering it to the ground; where they will refit a new section that has been assembled on the ground, then lift and attach it as a modular section to the roofing structure. The frame is capable of lifting 140 square metres of roofing at a time.

The frame offers appropriate fall protection with end and side mesh barriers and kick boards in place. The manager describes how to access the frames through the access gates which have lockable components. The manager also demonstrates how to store required equipment once inside the frame and has provided safety straps with all tools and equipment to ensure they do not fall from the frames while working.

The manager also provides each of the workers with a safety harness that is attached to an anchor point on the frame and demonstrates how to adjust the safety harness to meet the individual needs of each employee. Employees are then paired up to check each other's safety harness adjustments and to commence work.



Revision

- Always assess the level of risk involved in each activity prior to starting work.
- A JSA is a method of assessing the risk associated with a task, identifying strategies to minimise and control the risk and take action to prevent injury.
- Correct access to the work area minimises the risks and ensures the safety of all workers.
- Clear and frequent verbal communication between team members assists in the common understanding of requirements for the task and safety.
- Ensure regular inspection and correct use of fall protection equipment at all times.
- Fall protection equipment includes:
 - safety harnesses
 - fall arrest devices
 - industrial fall arrest systems and devices
 - purpose-built frames or cages.
- It is important to consider the risk of objects falling during movement, so careful choice of transport and securing methods is essential to reduce the risk of injury to workers.
- Eliminating unsafe work practices reduces the risk of injury or death.

Are you ready?

Use this checklist to assess if you are ready for assessment activity 1.

I understand how to:

- ☐ Identify site of proposed work
- ☐ Identify method of access
- ☐ Identify tasks
- ☐ Identify required fall protection equipment
- ☐ Move tools and equipment to work area

Section 2.4: Eliminating or minimising the risk of items being knocked down

Correct placement of tools and equipment is essential to minimise or eliminate the risk of equipment falling and causing injury to others. Materials and tools should be placed so they do not cause trip hazards. Sometimes due to working conditions visibility may be limited. If there is a chance someone could trip or kick the equipment, it should be restrained or placed elsewhere.

Work platforms can hold a variety of equipment; for example, compressors, power tools and smaller items. The larger items should be fixed to the platform where possible, and the smaller tools should be contained in an accessible unit that is then fixed in place. If the employee has accessed the work area using an elevated work platform (EWP) the materials may be contained within the EWP itself, thus minimising the risk of them being knocked and falling.

Tool safety straps may be attached to smaller tools such as hammers to ensure that if they do come free they don't fall very far. They can be attached to harnesses or anchor points with smaller items being attached to the workers wrist. The use of equipment belts to hold small objects such as tape measures, screws and fittings can also prevent the loss of these items during the work process.



Equipment belt

Workers should return equipment to their storage unit as soon as they have finished using the item. If there is no storage unit, tie the item down or cover it to prevent it from falling. Minimising the number of items required at any time also limits the risk. Where possible finish one task and put the equipment away before commencing another.

Assessment activity 2

Accessing work area

The following table maps the assessment activity for this chapter against the element and performance criteria of Element 2 in *CPCCCM2010A Work safely at heights*.

Part	Element	Performance criteria
Whole activity	2	2.1, 2.2, 2.3, 2.4

Read the case study and answer the following questions.

Case study

Rod's company is to construct a bridging walkway between two university blocks. The access way will be on two levels, level two (5 m above ground) and level three (10 m above ground) of the buildings and will be 10 m each in length. They are to be covered so as to protect pedestrians from the wind and rain. Scaffolding has been erected and work platforms provided at each level allowing employees to access the work area. Workers are to use the ladders provided to access the work platforms.

1. List two types of fall protection equipment that may be used by workers.
2. List one place you could access information about the required fall protection equipment to be used in conjunction with the ladders.
3. Will it be necessary to adjust the safety harnesses? Explain your answer.
4. Briefly explain one method of securing tools to avoid them falling from heights during work progress?
5. List one way that tools could be transported safely to each of the work platforms.

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 learner guide. Keep copies of material you have prepared as further evidence of your skills.

Final assessment

To be assessed as competent in *CPCCCM2010A Work safely at heights*, 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 *CPCCCM2010A Work safely at heights*.

Part	Element	Performance criteria
A	1, 2, 3	All
B	1, 2, 3	All

For detailed mapping of this learner guide 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.

Part A

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

Required skills

Demonstrate to your trainer or assessor how you:

- use communication skills to:
 - 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
- use organisational skills, including the ability to plan and set out work
- 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.