

CS ENERGY PROCEDURE

LADDERS CS-OHS-52

Responsible Officer: Health and Safety Specialist
Responsible Manager: Head of Health and Safety
Responsible Executive: Executive General Manager Plant Operations

DOCUMENT HISTORY

Key Changes	Prepared By	Checked By	Approved By	Date
Original Document for Implementation	D Clarke	A Brown	A Brown	16/04/2012
Updated with Code of Practice changes and link to Inspection Checklist	T Hoare	A Cashin L Garland	S Colley	09/03/2022
Reviewed, no changes required.	C Jackson	A Cashin	B Prain	09/12/2024

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1 PURPOSE

The purpose of this procedure is to ensure that all employees have basic knowledge on the selection and safe use of ladders in the workplace. Portable ladders used on site shall comply with the requirements of the AS1892 series of Australian Standards and Managing the Risk of Falls at Workplaces Code of Practice 2021.

Ladders are to be used as a means of getting to (access) and from (egress) a work area rather than being used as a work platform. If using a ladder is the only practical means of performing the task, then it shall be used in a safe manner and shall be correctly secured before use. A second person may be required to assist in securing the ladder.

The types of tasks which can be performed safely from a ladder are limited. A second system of control, (such as using a harness attached to a suitable anchor point), shall be used if there is any potential for overbalancing leading to a fall.

2 SCOPE

This procedure shall apply to all CS Energy employees, visitors, contractors and their employees.

3 RESPONSIBILITIES AND ACCOUNTABILITIES

3.1 Site Manager

Site Manager is responsible for ensuring that:

- Systems are in place to ensure appropriate ladders are readily available for workers; and
- Systems are in place to ensure ladders are kept in a good state of repair.

3.2 Employees and Contractors

Employees and contractors shall:

- Ensure that all ladders used are not defective;
- Notifying their manager / supervisor in the event defects are identified and tag the ladder indicating that the ladder 'out of service'.
- Raise a Notification in SAP for repairs to be completed or ensure the ladder is withdrawn from use permanently.

4 SAFE USE OF LADDERS

4.1 General Use

The following guidelines apply to the general use of ladders at CS Energy sites. The use of moveable hand railed platforms with ladders access ('Platform Ladders') which are designed to be worked on are considered separately (See Section 4.2 *Platform Ladders*).

Persons using ladders must have at least 2 hands and 1 foot or 2 feet and 1 hand on the ladder at all times. **This is known as the 3 point rule.**

Ladders must only be used for gaining access rather than as a temporary work platform, except when undertaking authorised work, where 'authorised' (i.e. approved JSEA) work conducted on a ladder with:

- Equipment being handled on the ladder will not cause the person to lose balance;
- The person's trunk is over the centre of the ladder and not to the side leaning out; or
- Any equipment being used by the person can be operated by one hand.

If a person is carrying out 'authorised' (i.e. approved JSEA) work on a ladder they must have the ladder secured at or near the top or at or near the bottom to prevent the ladder from moving, AND one of the following:

- Have 3 point contact; or
- Use a pole strap if leaning against a pole; or
- Hold another stable object with one or both of their hands (i.e. guttering, fascia board); or
- Use a fall arrest harness not attached to the ladder.

Additional requirements for safe ladder use include:

- Aluminium ladders and timber ladders with wire reinforcing shall not be used where an electrical risk exists.
- The bottom of the ladder must be on a stable surface.
- If the ladder is leaning against a pole, there must be a device fitted at or near the top of ladder to hold it in place (i.e. steel rope or hoop).
- Personnel must ensure ladders are not loaded in excess of the safe working load. Total weight will include the person and tools or equipment.
- Personnel should avoid carrying any items while climbing, or where this is not possible must ensure the load does not restrict movement or cause a person to overbalance.
- Wherever possible, two persons should handle and erect ladders to minimise manual handling risks.
- Ladders, except for step ladders, should be secured at the foot or head while in use (this may be done via another person holding the ladder or through more permanent anchors);
- On step ladders, no tread above the third from the top should be used
- Where personnel are working on a ladder above 2.0m (rather than gaining access), and they cannot maintain three points of contact, this work is considered to be working at heights and additional relevant controls will need to be implemented.

NOTE: Working from a ladder positioned next to handrails may result in the handrails no longer being an effective engineering control for managing the risk of falls, especially to a lower level. In these cases, additional working at heights controls will be required.

- Single and extension ladders should be prevented from slipping by:
 - ensuring the ladder has non-slip feet;
 - placing ladders at a slope of 4:1 (the distance between the ladder base and the supporting structure should be about 1 metre for every 4 metres of working ladder height, see Figure 2)
 - securing ladders at the top or bottom, or if necessary, at both ends (see Figure 3).

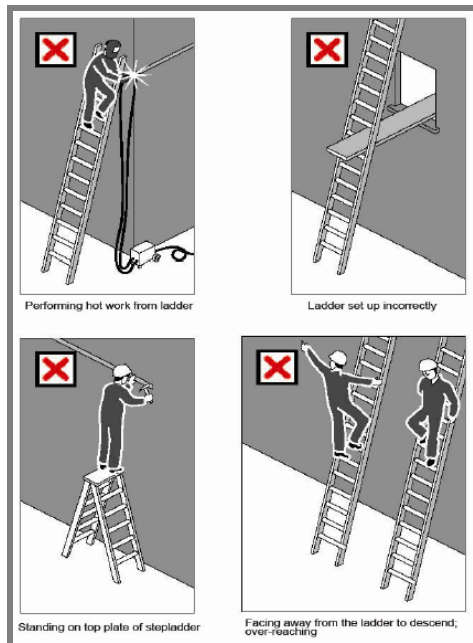


Figure 1 - Example of Unsafe Ladder Use

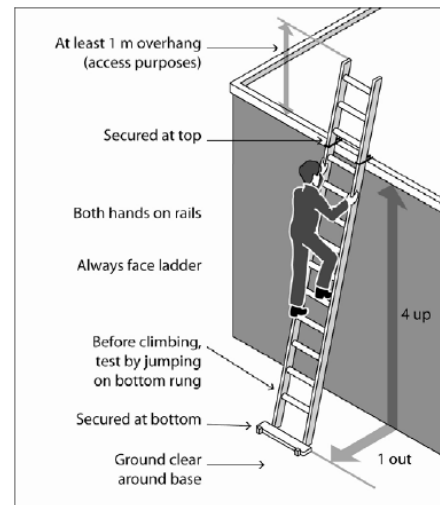


Figure 2 - Example of Safe Ladder Use

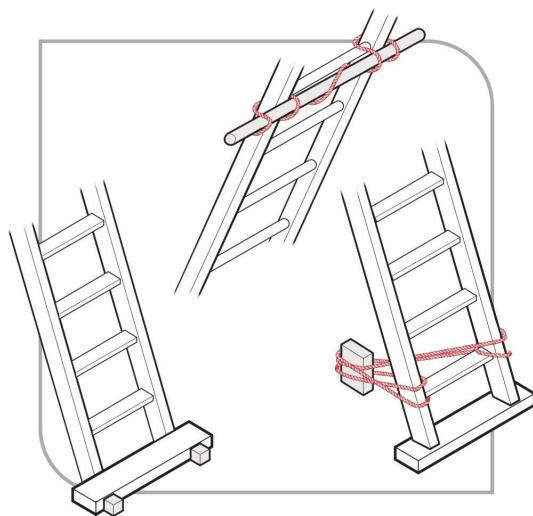


Figure 3 - Examples of effective securing of a ladder

4.2 Platform Ladder Exemptions

Permanently configured movable hand railed platforms with ladder access that are designed to be worked on are deemed to be separate to general Ladders (See AS/NZS1657:2018). Such pieces of equipment ('Platform Ladders') pose similar risks to working from a completed Scaffolds and therefore 'Section 4.1 General Use' do not apply when working from within the enclosed area on a Platform Ladder.

A Platform Ladder must be able to enclose the worker to prevent the risk of falls via the use of guardrails, mid-rails and a gate to prevent the worker from working at heights. If the worker cannot be fully enclosed, then the relevant requirements of "Section 4.1 General Use" and/or Working at Heights requirements must be in place when applicable.

4.3 Selection of a Ladder

Where possible and practical, alternative options should be considered first. Alternative options may include the use of platform ladders, scaffolding or elevated work platforms etc.

Any ladder selected shall be of sufficient length to ensure the following conditions are met:

- The ladder can be used at a slope no greater than 4 in 1.
- The ladder extends at least 1 metre above the platform to be reached.
- A person can stand at least 1 metre/ no higher than 3 rungs from the top of the ladder when in the working position.



Figure 4 - Examples of Portable Ladders



The points listed below shall also be taken into consideration when making your selection:

- Self-supporting step ladders are considered suitable for use in places where there is no support adjacent to the working point.
- There shall be sufficient space to use the step ladder in a fully spread position.
- Metal ladders and timber ladders with wire reinforcing shall not be used where an electrical hazard exists.
- Timber ladders should not be placed where they are subject to prolonged exposure to high temperatures.
- Consider the environment which aluminium ladders are to be used for chemical interaction as aluminium is highly reactive e.g. around caustic tanks etc.
- If a ladder cannot meet the above conditions, then some form of mobile platform or scaffold shall be used.
- The use of rope ladders is considered a last resort and their use requires a specific risk assessment.

4.4 Maximum Ladder Lengths

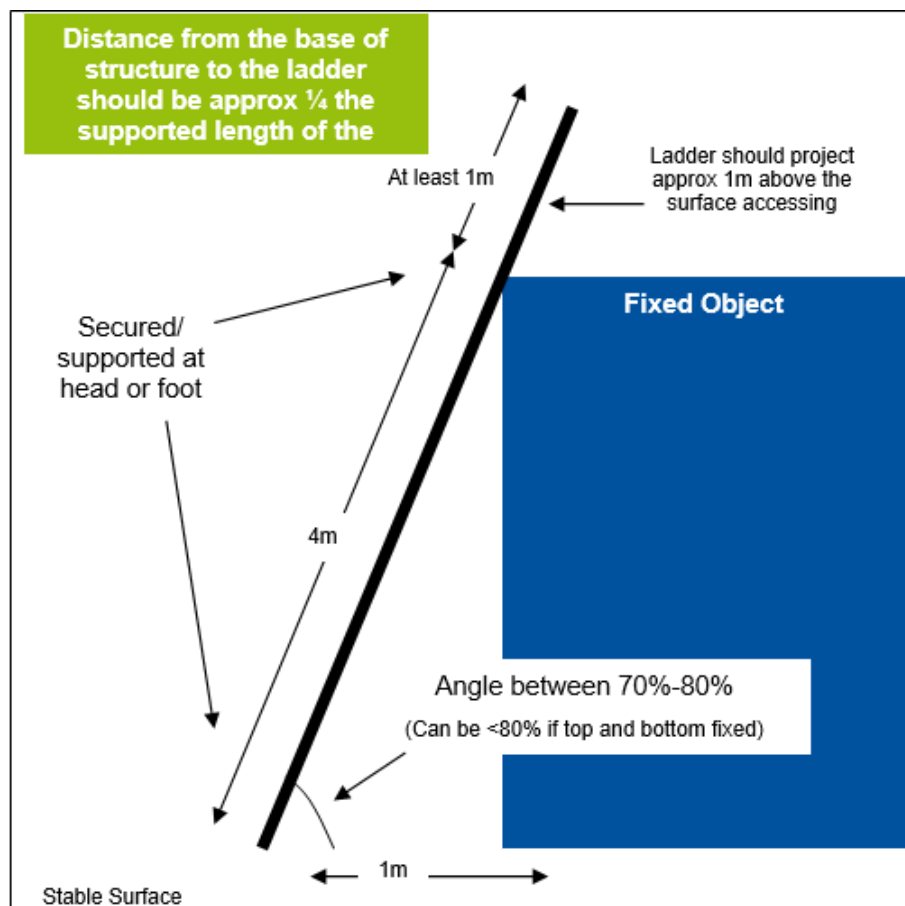
The maximum length for ladders used on CS Energy sites are listed below:

Maximum Safe Length of Ladders	
Step ladders	3 Metres
Single Ladders	6.1 Metres
Extension Ladders	7.5 Metres
Extension Ladders (only for electrical work)	9.2 Metres

4.5 Ladder Positioning Key Points

Portable ladders shall be positioned on a substantial base and the following requirements shall be met:

- Wooden blocks, bricks or off-cuts shall not be used to level the feet of any ladder.
- A pitch ratio of 4 in 1 is required (the base of the ladder shall be 25% of its length from the vertical surface you are accessing).
- The ladder shall be positioned in such a manner as to have clear access top and bottom with the top of the ladder extending at least one metre above the landing you wish to access.
- The ladder shall be secured correctly at the top or footed.



5 INSPECTION AND MAINTENANCE

To ensure ladders are appropriately maintained the following actions must be undertaken at each site:

- Employees are to conduct a visual inspection immediately prior to use to identify any significant defects:
 - Loose Steps or rungs that can be moved by hand;
 - Slippery steps or rungs;
 - Cracks or splits in steps, rungs or stiles;
 - Loose nails or bolts or other metals parts; or
 - Damaged or missing ties.
- Ladder is firm, stable and level on the ground, secure at the top and sitting at a 4:1 ratio;
- Materials and tools are not carried whilst climbing the ladders;
- Ladders are to be stored in a secure covered area away from exposure to weather elements;
- All ladders are to be inspected periodically (at least annually) by a competent person and records of inspections kept;
- Ladders that fail a test must be taken out of service immediately and tagged appropriately; and
- Faulty ladders are to be discarded appropriately and not sold or given to employees or members of the public for personal use.



- **Under no circumstances** shall any temporary repairs be made to a ladder.

6 STORING LADDERS

All mobile ladders are to be stored in appropriate holding facilities that do not contribute to the degradation of the ladder (i.e. in covered areas unexposed to the environment). Ladders should not be kept behind doors or in walkways. They can be hung where reasonably practicable and out of the way – ensure there is minimal risk of falling.

7 TRAINING AND COMPETENCY

Prior to using a ladder, all personnel must have relevant training for the safe use of ladders. As a minimum, it is a requirement that prior to any work being carried out from a ladder, that:

- Personnel be familiar with the requirements of this procedure and the manufacturer's instructions;
- An appropriate risk assessment (JSEA or 2x2 Task Risk Analysis) is carried out; and
- All controls identified in the risk assessment and this procedure are in place before commencement of the task.

Familiarity with the procedure will be provided (as a minimum) via awareness information during the site induction and through the Health and Safety Handbook.

Specific Working at Heights Training provided by CS Energy through the preferred Registered Training Organisation will also provide supplementary training for the safe use of Ladders.

B/D/11/19581 - CS-PTW-HAZ-02 - Working at Heights details the specific levels of training for any Work at Heights. Can this be added to the References table?

8 DEFINITIONS

Term	Definition
Anchorage Point	A device or thing by which a lanyard, static line or other line may be attached to a building or other structure, and includes the part of the building or structure to which the device or thing is attached.
Competent Person	A person who has through a combination of training, education and experience, acquired knowledge and skills enabling that person to perform correctly a specified task.
Elevating Work Platforms	Powered mobile plant designed to lift personnel to a work location by means of a telescoping device, scissor action or articulated device.
Ladder	Includes portable single, extension and step type ladder
Competent Person	The person proposing the installation or removal of the modification (may be implementer)
Shall	Indicates that compliance with the requirement is mandatory.
Travel Restraint System	A travel restraint system is designed to prevent a person from entering into a position where they could fall. It will typically involve an anchor (this may be a fixed point or a static line), lanyard to attach the person to the anchor and a harness to securely attach the person to the lanyard.
Fall Arrest System	Fall arrest systems should only be used in situations when it is not reasonably practicable to use either temporary work platforms or guardrails. A fall arrest system is designed to catch a person once they have fallen from a height. It consists of an anchor, lanyard, personal energy absorber or restraint device and harness.
Removal of Handrails or Flooring	Removal of protected edge (handrails and flooring) is work: <ul style="list-style-type: none"> Where a removal of plant (e.g. handrails, flooring, or other device etc.) that exposes edges 0.5m or greater; and Where a person could fall at 0.5m or greater.
Unprotected edge	A drop off/fall of any height which is created by the removal/modification to an existing structure which is in place preventing exposure to a unprotected edge (e.g. removal of flooring, handrails, stairs, hatches, pit covers, manholes, etc.)

9 REFERENCES

Reference No	Reference Title	Author
B/D/11/19582	CS-PTW-01 - CS Energy PTW Manual	CS Energy
B/D/12/2876	S19720 - Working at Heights Control Checklist	CS Energy
B/D/21/10179	Ladder inspection Checklist	CS Energy
	Queensland Work Safety and Health Regulations 2011	Qld Govt
AS 1576	Scaffolding	
AS 1716	Respiratory Protective Devices	
AS 1891	Industrial Fall Arrest Systems and Devices Suite	
AS 1892	Portable Ladders	
AS 4576	Guidelines for Scaffolding	
AS 4389	Safety Mesh	
AS 4488.2	Industrial Rope Access System	
AS 1657	Fixed Platforms, walkways, stairways and ladders – Design, construction and installation	
AS 2550.1	Cranes – Safe use – Elevating Work Platforms	
	Managing the risk of falls at workplaces Code of Practice 2021	Qld Govt

10 RECORDS MANAGEMENT

In order to maintain continual improvement, suitability, safety and effectiveness of the organisation, registered documents will be reviewed on a two-yearly basis or at intervals specified by legislative or regulatory requirements. Review of controlled documents should occur where it has been identified that there are changes in technology, legislation, standards, regulation or where experience identifies the need for alteration to the content. Registered documents should also be reviewed following an incident, change management process, modification or where directed as part of a risk assessment process. A 'review' can simply mean that it has been identified, confirmed and appropriately recorded that no changes are required and that the existing process remains the same.

Government Owned Corporations must ensure that records are retained according to accountability, legal, administrative, financial, commercial and operational requirements and expectations. In compliance with records retention and disposal, all documentation created in relation to business must be retained in line with minimum retention periods as detailed in legal retention and disposal schedules.