

Guidance note

Preventing falls from earthmoving equipment

This information sheet provides advice on preventing falls from earthmoving equipment during on-site inspection, maintenance and repairs.

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Background

Falls from earthmoving equipment may result in death or serious injury such as fractures, spinal cord injuries, concussions and brain damage. Plant operators and service personnel may be at risk of falls from earthmoving equipment during on-site inspection, maintenance or repairs. These risks must be managed.

A key principle of health and safety is that workers be given the highest level of protection that is reasonably practicable in the circumstances.

WorkSafe considers the most practicable and economical method to protect workers from falls from earthmoving equipment is to have physical fall protection fitted. Where it is not reasonably practicable to have physical fall protection, other control measures must be in place.

Identifying the hazard

Workers may be at risk of a fall from earthmoving equipment when they perform tasks such as:

- accessing service and inspection points
- refuelling
- scheduled maintenance and cleaning (eg fluid checks and servicing)
- unscheduled or breakdown repairs
- removing or replacing vandal proof covers
- carrying items to service points (grease guns, fluid containers)
- adjusting operator controls, roofs, mirrors and seating.

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1. Elimination
2. Physical fall protection
3. Work positioning system
4. Administrative controls and ladders

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Control measures

Control measures to manage fall risks should follow the hierarchy of control and in many instances a combination of approaches will result in the best solution. Controls should be reviewed regularly and modified, if necessary, to ensure they remain effective.

1. Elimination

Eliminate the risk by working from the ground or a solid construction.

For example:

- Relocate gauges and inspection points for pre-start checks to locations accessible from the ground.
- Use long handle tools to do cleaning tasks from the ground.
- Use designated 'park-up' areas that allow for safe access during service, maintenance and pre-start checks.
- Select equipment that removes the risk of falls through good design, such as:
 - gauges and inspection points accessible from the ground
 - centralised greasing systems.
 - steps that are designed to prevent the build up of dirt.
 - flexible greasing hoses accessible from ground level.
- Regularly maintain steps to repair damage and remove dirt build-up to reduce the risk of slips, trips and falls.

2. Physical fall protection

If not possible to eliminate the hazard, use physical fall prevention such as:

- integrated guardrails
- scaffolding
- elevating work platforms
- fixed work platforms
- specialised service vehicles to provide safe access.

Integrated guardrails provide physical fall protection that is present at all times and does not rely on people to do the right thing when inspecting, servicing or repairing the equipment.



◀ The engine bay of this excavator is fully enclosed by integrated guardrails. This enables safe pre-start checks and maintenance on site (including safe access and egress).

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Note: Unless designed to handle the vibration from the earthmoving equipment, integrated guardrails may be susceptible to fatigue cracking. Inspection of guardrails should be part of regular plant maintenance.



◀ Guardrails incorporating a section of wire rope to reduce fatigue cracking due to vibrations.



◀ Guardrails installed beside the engine bay of an articulated dump truck provide physical fall protection for pre-start checks and servicing.

3. Work positioning system

If not reasonably practicable to apply one of the above controls, use a work-positioning system such as a travel restraint system. If considering a work positioning system, you must also provide:

- designated anchor points (15kN capacity)
- a harness and suitable length lanyard (rated fall arrest)
- storage for harness and other system equipment
- training for workers
- a detailed safe work method statement (SWMS) for the task (including inspection, set-up and use of the system)
- increased supervision
- procedures for the prompt rescue of a worker in the event of a fall.

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Work-positioning systems are not the preferred option for earthmoving equipment as these controls rely on people to do the right thing when inspecting, servicing or repairing the equipment.

Note: Generally, harness systems must be used in fall restraint mode, not fall arrest mode, as fall heights from earthmoving equipment are too low for the system to arrest a fall.

4. Administrative controls and ladders

Administrative controls and ladders can also be used for some tasks; however these controls are the least effective in controlling the risk of falls. Ladders are not suitable for long duration or high force tasks. Administrative controls must be properly used, reviewed and maintained.

Safe work method statements

An SWMS must also be developed and followed if the fall height is more than two metres or the task is performed on a construction site and:

- there is movement of powered mobile plant
- is on or adjacent to roadways or railways used by road or rail traffic
- is over or adjacent to water or other liquids, if there is a risk of drowning.

Industry initiatives

A number of large civil construction projects and larger civil contractors have strict requirements for fall protection on earthmoving equipment.

This includes ensuring:

- only plant with physical fall protection is permitted on-site or the operation of the plant is restricted (including prohibiting pre-start checks before sunrise)
- all trafficable surfaces on the plant are to have non-slip surfaces
- tracked vehicles are slewed to the correct orientation to enable safe access/egress to check and service points.

Purchasing earthmoving equipment

When purchasing or hiring earthmoving equipment, consider if workers will be protected from falls during refuelling, servicing, maintenance and repairs.

- are the pre-start check points accessible from ground level?
- are guardrails fitted to the areas where there is a fall risk?
- is there a protected means of access and egress to these areas?

Most manufacturers now produce earthmoving equipment with guardrail mounting points as standard and provide guardrails as an optional extra. There are also several manufacturers that produce after-market guardrails that can be fitted to existing plant.

Consult operators, service personnel and any health and safety representatives when considering purchases of earthmoving equipment or developing fall prevention solutions.

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Call us on: **1800 136 089**

Email us at: **info@worksafe.vic.gov.au**

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Publications

WorkSafe Victoria Compliance Code,
Prevention of falls in general construction

Civil Contractors Federation Guide,
How to prevent falls when using mobile plant.

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