

ACT WorkCover

A Guide to



Scaffolding Safety

January 2006

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January 2006

CONTENTS

Introduction	2
Overview of Scaffolding Injuries	3
Overview of Scaffolding Injuries and Fatalities (2003-04)	3
Controlling the Risk of Internal Falls.....	3
Fully Decking Each Lift	3
Advantages	4
Precautions	5
Controlling the Risk of External Falls	6
Sequential Erection	6
Controlling the Risk of Climbing Falls with Safe Access Systems.....	7
Summary	7
Fall Arrest & Travel Restraint Systems for Scaffolders	8
Safety Harness	8
Further Information	12

Introduction

Scaffolding is defined as the erection, alteration or dismantling of a temporary structure, specifically erected to support platforms.¹

Scaffolds are commonly used for working at heights and there is the potential risk for a scaffolder (person working on a scaffold) to fall from an incomplete scaffold during the erection and dismantling of a scaffold.

In particular, scaffolders can be exposed to fall hazards:

- during the placement or removal of scaffold plants (internal fall)
- from the open sides or ends of the scaffold (external fall)
- in climbing from one lift of the scaffold to the next lift (climbing fall).

This guide will help you to identify some of the potential risks and provides solutions and tips for fall protection when erecting, dismantling or altering scaffolding, to help reduce injuries and fatalities resulting from working unsafely on scaffolds.

¹ NOHSC Standard for Users and Operators of Industrial Equipment [NOHSC 1006(2001)]
– 3rd Edition

Overview of Scaffolding Injuries

Overview of Scaffolding Injuries and Fatalities (2003-04)

- Falls from a height - 26%
- Falls on the same level - 15%

Controlling the Risk of Internal Falls

Fully Decking Each Lift

The risk of internal falls while erecting a scaffold can be controlled by fully decking each lift.

This involves:

- positioning a full deck of planks at each lift
- positioning planks on the next lift whilst standing on a full-decked platform and
- leaving each lift fully decked in place until it is dismantled.

During dismantling a lift, planks are removed while standing on the full-decked platform immediately below.

Advantages

By adopting this method:

- Scaffolders working aloft cannot fall through the scaffold.
- Principal contractors can authorise work from any given lift of the scaffold without the time delay and expense of having working platforms relocated from one lift to another.

Note: all platforms will require full edge protection (guardrails-midrails-toeboards or guardrails-brickguards) to enable such authorisation.

- Shade cloth and other types of containment sheeting can be installed safely and easily.

Access to scaffolds for routine inspections is improved.

Precautions

Precautions associated with this method include:

- The scaffold design must be checked to ensure that the placement of a full deck at each lift will not adversely affect the working capacity of the scaffold's standards and/or supporting structure.
- Decks on non-working lifts must be physically closed off and signposted to prevent their inadvertent use, where the number of fully decked lifts exceeds the number of simultaneously used and/or loaded working platforms that the scaffold can safely support.
- Where the provision of additional decks of planks involves hazardous manual handling tasks, a risk assessment must be conducted and appropriate control measures must be implemented. Control measures should be, in the first instance, mechanical aids such as cranes, hoists or forklifts. Where this is not reasonably practicable, consideration should be given to other measures such as increased gang sizes, job rotation or additional breaks.

Controlling the Risk of External Falls

Sequential Erection

The risk of external falls from the open sides and ends of the scaffold can be reasonably controlled by adopting the sequential erection method.

This method involves the one-bay-at-a-time sequential installation of standards and guardrails (*or guardrails alone where standards are already in place*). This ensures that scaffolders are not required to walk further than one bay length along an exposed edge of a scaffold platform. Dismantling is simply a reverse of the sequence.

It should be noted that where platform brackets (“hop-ups”) are to be installed later, where the adjacent structure is yet to be built or in other similar circumstances, internal guard rails should also be installed as part of the above sequence.

The use of the sequential erection method does not preclude the use of alternative methods such as purpose-designed proprietary advance guardrail systems or other systems of work that provide an equivalent level of fall protection.

The particular method selected to control the risk of external falls will depend upon the relative feasibility of its application to the scaffold configuration being considered.

Controlling the Risk of Climbing Falls with Safe Access Systems

Ensuring that an appropriate access system is in place can control the risk of climbing falls for scaffolders gaining access from one lift to the next. This can be in the form of a stairway or ladder access that is progressively installed as the scaffold is erected, rather than added on at a later stage.

Employers should ensure that the practice of scaffolders climbing the scaffold framework is strictly forbidden.

Summary

The three typical situations where scaffolders can be exposed to a risk of a fall (internal, external and climbing) can be reasonably controlled by a combination of fully decking each lift, using the sequential erection method and progressively providing access as the scaffold is erected.

Fall Arrest & Travel Restraint Systems for Scaffolders

Safety Harness

The use of a safety harness as a fall injury prevention system has limited practical application for the construction of scaffolds. A harness should **not** be used where:

- it is possible for scaffolders to hit an object prior to their fall being arrested (*See Figure 1*)
- its use would restrict the scaffolder's free movement so as to increase the risk of sprain or strain injuries.
- its use would present a risk of scaffold components becoming entangled or unbalanced during handling.
- there is no adequate and correctly positioned anchorage for lanyards or inertia reels.

NOTE: *Safety harnesses should not be used in the erection and dismantling of normal standing scaffolds.*

ACCEPTABLE

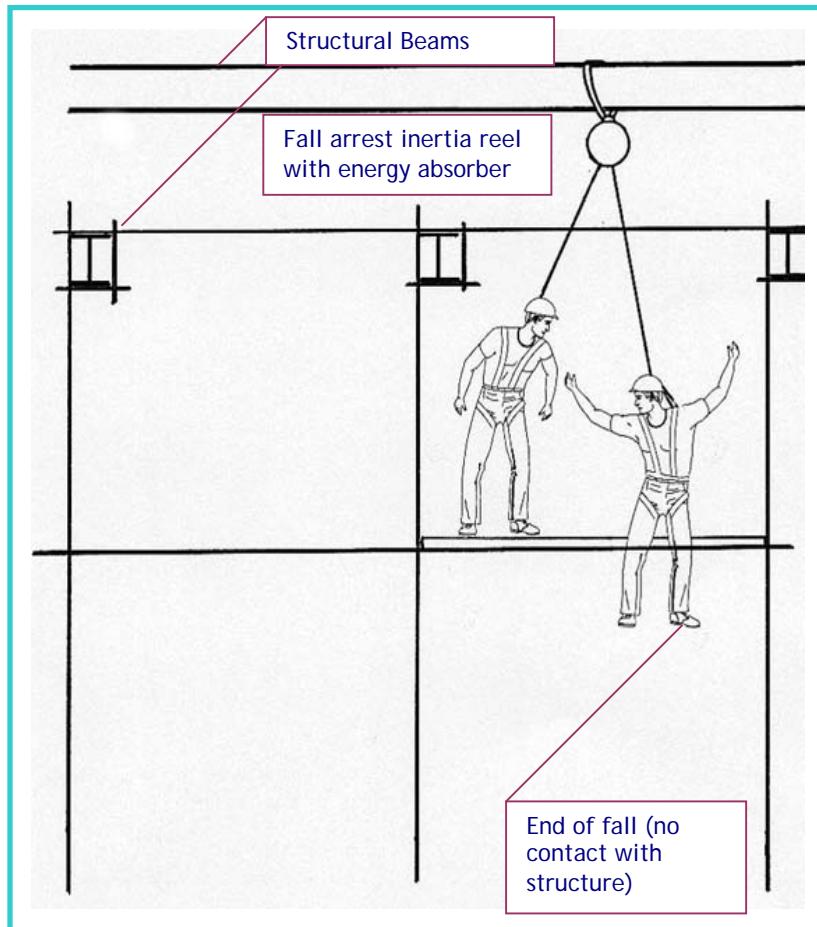


Figure 1: Appropriate use of a harness system in the erection and dismantling of a hung scaffold.

Safety harness systems would be an acceptable control solution in the following situations when erecting or dismantling scaffolds:

- On hung scaffolds, where the scaffold is constructed from top to bottom and there is nothing for the scaffolder to strike below in the event of a fall (*see Figure 1*).
- On cantilevered needles (for the erection of the first lift and later for dismantling that lift) and for decking between the needles.
- When attaching and removing spurs that project from the supporting scaffold or supporting structure.
- When fixing and removing trolley tracks on suspension rigs. (A trolley track is a suspended rail that supports and guides trolleys for swing stages, work cages, boatswain's chairs and other types of suspended scaffolding).

NOTE: *If harness systems are used, in all instances a scaffolder must not be exposed to a fall prior to being securely connected to, or after being disconnected from the anchorage point.*

UNACCEPTABLE

Anchorage point
(note: scaffold tube will not have adequate capacity - min 15 kilonewtons)

2 metre lanyard

Energy absorber

End of fall -
worker strikes transom

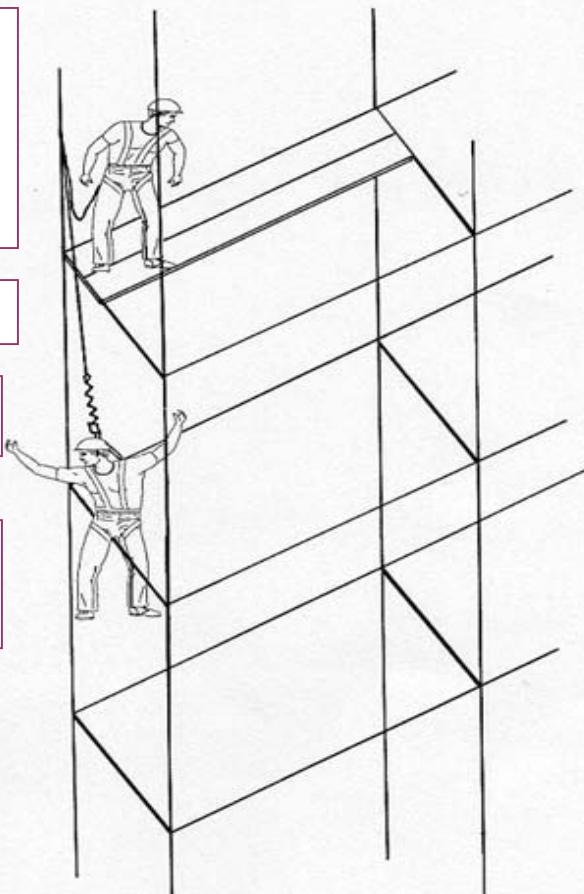


Figure 2: Why harnesses are not acceptable for normal scaffolding work (ie. scaffolds built from the ground up).

Further Information

Occupational Health and Safety Act 1989 (the Act)

Scaffolding and Lifts Act (1912)

Scaffold and Lifts Regulations 1950

ACT WorkCover Information Bulletin - Scaffolding 04.16

ACT WorkCover Information Bulletin - Falls Prevention on Construction Sites 3.14

ACT WorkCover Steel Construction Code of Practice, April 1997

AS/NZS 4576 - Guidelines for Scaffolding, available from Standards Australia at www.standards.com.au or telephone on 1300654 646

ACT WorkCover website: www.workcover@act.gov.au

Notes



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