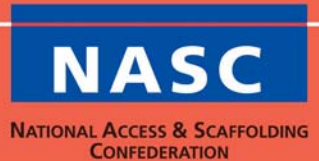


# SG4:05 Appendix A

## Interim Guidance on Collective Fall Prevention Systems in Scaffolding



### 1.0 INTRODUCTION

This advice and guidance is intended to provide an overview of new and developing technology and work methods available within the scaffolding industry, and to ensure that a balanced view of all **collective** fall prevention methods are considered ahead of sole reliance upon **personal** fall arrest methods.

The hierarchy for safe working at height is well defined within the Work at Height Regulations and further guidance relating specifically to scaffolding operations is contained within NASC guide SG4:05 Preventing Falls in Scaffolding and Formwork. Falling from height is a hazard present within many construction related activities and is still the major cause of fatal accidents within the industry.

This interim advisory note has been prepared following the statement from HSE that the aspects of “traversing” or “tunnelling” contained within NASC guidance are no longer acceptable and that their withdrawal from industry guidance will be requested at the next update. The NASC are planning to issue a fully revised version of the guidance within 2010. This guidance has been produced with the assistance and input of NASC members and the Health and Safety Executive

Accident and Incident Statistics: (All data taken from NASC Health & Safety returns and only includes NASC members.)

Since the introduction of SG4:00 in 2000 there has been a 40% reduction in the number of falls recorded from a scaffold/working platform – from 27 in 2001 to 17 in 2007. This reduction is in spite of a 17.5% increase in the number of operatives working within the NASC membership, from 11950 in 2001 to 14029 in 2007. During this period, no fatal accidents have occurred whilst operatives were working within the requirements of SG4. However, in order to work within the requirements of SG4, methods of fall prevention must be considered ahead of methods of fall mitigation.

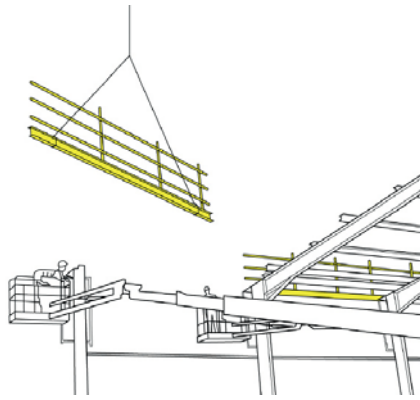
It is the view of the NASC that scaffolders will be required to wear suitable fall arrest equipment at all times whilst working because of the tasks associated with moving working platforms, undertaking alterations and performing non standard tasks such as fitting ladder/unit beams etc.

#### Work at Height Regulations – Hierarchy of Controls

The principle of fall prevention and the reduction of risk are based on a simple hierarchy that must be followed systematically and only when one level is not reasonably practicable may the next level be considered. Where it is reasonably practicable to prevent a fall, precautions should be taken to do so. It is not acceptable to select work equipment from lower down the hierarchy (e.g. personal fall arrest systems) in the first instance.

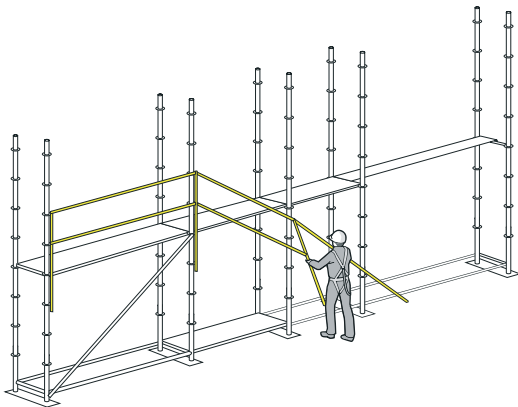
Those in control of the work must:

- **Avoid work at height where possible**

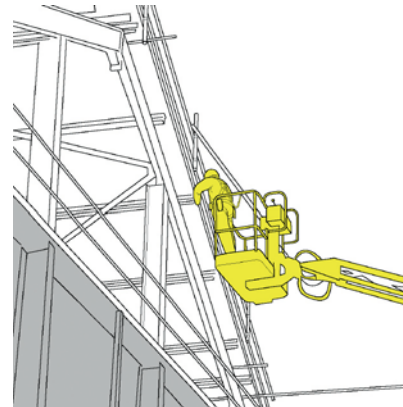


**Figure 1** – Pre-assembled guardrails fixed to structural steelwork beams prior to lifting into position

- **Prevent Falls** – Use work equipment or other measures to prevent falls where they cannot avoid working at height

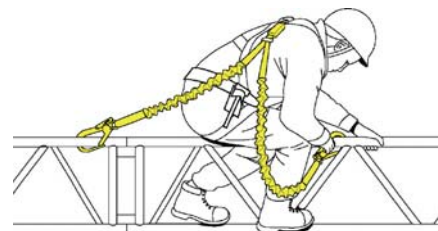
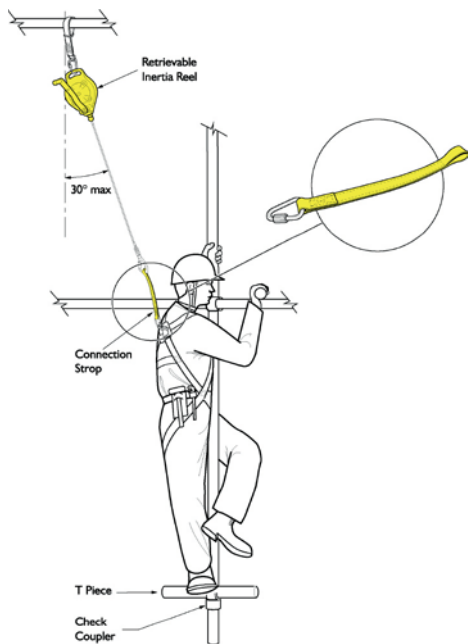


**Figure 2** – Advanced Guardrail System



**Figure 3** – Powered Access

- **Mitigate distances and consequences of a fall** – Where they cannot eliminate the risk of a fall, use work equipment or other measures to mitigate the distance and consequences of a fall, should one occur.



**Figure 4 & 5** – Scaffolders using personal fall arrest devices

Work at height avoidance and the use of fall arrest equipment are generally well covered within current industry guidance. The remainder of this document describes some of the progressive collective fall prevention methods currently available and developing within the industry.

## 2.0 COLLECTIVE FALL PREVENTION METHODS & SYSTEMS

- To enable effective use of Collective Fall Prevention Systems, employers will have to ensure that the sequence of the works is properly planned. This sequence may be supplied by the manufacturer in the form of an erection guide.
- Selection of the appropriate equipment for the work to be undertaken will need to be considered to ensure that equipment provided is suitable and fit for purpose.
- Employers should ensure that employees are properly trained in the application of collective fall prevention methods and systems and should ensure that this training is updated as appropriate. Refresher training should also be provided, where required.
- To ensure that safe systems of work at height are being adopted at the work place, management and supervision should make adequate arrangements for effective monitoring of sites. The monitoring should assess employee's compliance with required standards and should identify corrective and prevention action for non-compliance.

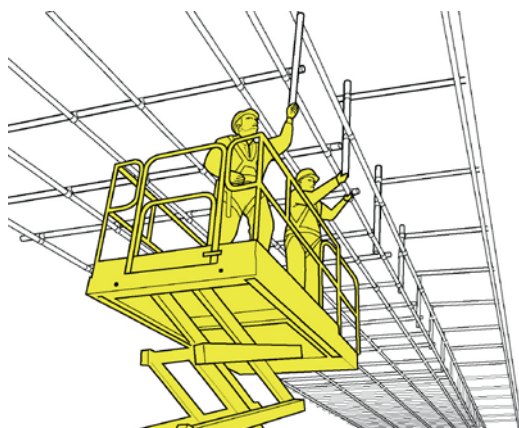
### 2.1 Mobile Elevated Work Platforms

The types of structure and situations in which the use of powered access to erect scaffolding may be most appropriate are covered within NASC guide SG4:05 Preventing Falls in Scaffolding and Formwork.

Powered access should be used for certain types of scaffolds such as access to steel-work, roof edge protection, cantilever type scaffolds and other structures not founded from the ground.

An assessment should be made to ensure that the appropriate equipment required is provided and that operators are competent.

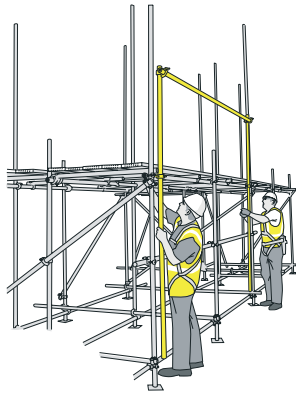
There are situations where powered access may not be appropriate such as areas of restricted access, work over water and overhead obstructions.



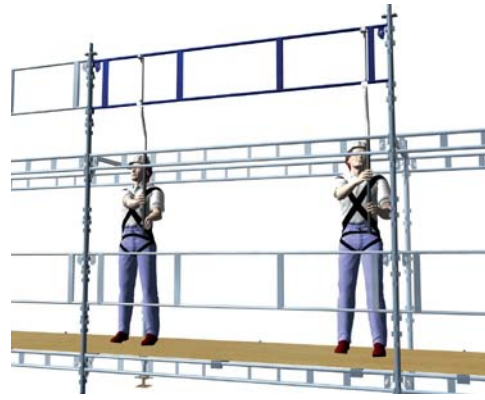
**Figure 6** – Erecting scaffolding from powered access

### 2.2 Advanced Guardrails

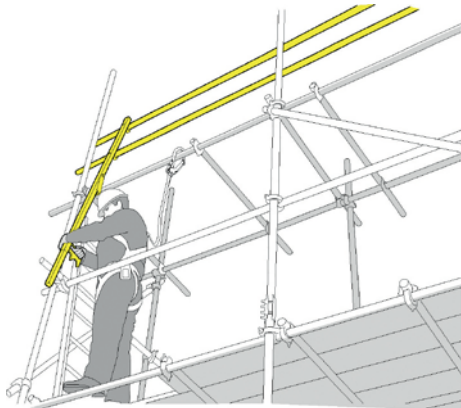
Advanced guardrails provide collective fall prevention to the external and internal edge of scaffold platforms ahead of scaffolders working at height.



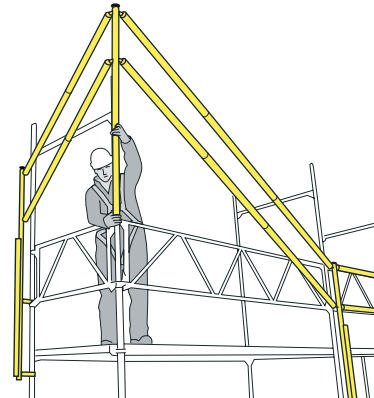
**Figure 7 – Tube and fitting Type Advanced Guardrail System**



**Figure 8 – System Type Advanced Guardrail System**



**Figure 9 – Pivoting Type Advanced Guardrail System**



**Figure 10 – Telescopic Type Advanced Guardrail System**

To ensure advance guardrails can be used effectively on all elevations, the sequence of the work may need to be altered to address obstructions to the assembly of the advance guardrail which may occur from the following:

- Rakers
- Bracing (façade and ledger)
- Protection fans and cantilevers
- Services
- Protruding transoms
- Hop up brackets

Where necessary, these can be overcome by raising the guardrail prior to fixing the components.

There are situations where some types of advance guardrails may not be appropriate:

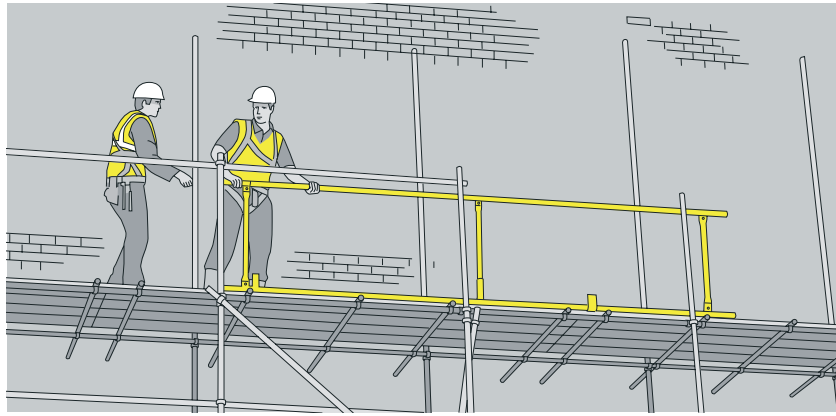
- Where complex facades, reveals, returns, balconies and other protrusions exist
- Where manufacturers recommended installation procedures prevent the use on internal façade
- Where the repetitive installation and removal of the equipment from site during progressive work is not practicable

### **2.3 Advance Guardrails (Horizontal application)**

Advanced guardrails that are fitted horizontally along the platform provide collective fall prevention to external and internal edge of scaffold platforms ahead of scaffolders working at height.

For this system to operate, alternate standards must be maintained at suitable heights to ensure the attachment of the guardrail during the scaffold erection sequence.

There must also be a system of work in place to ensure that the scaffolders have safe access to upper scaffold lifts for the first time.

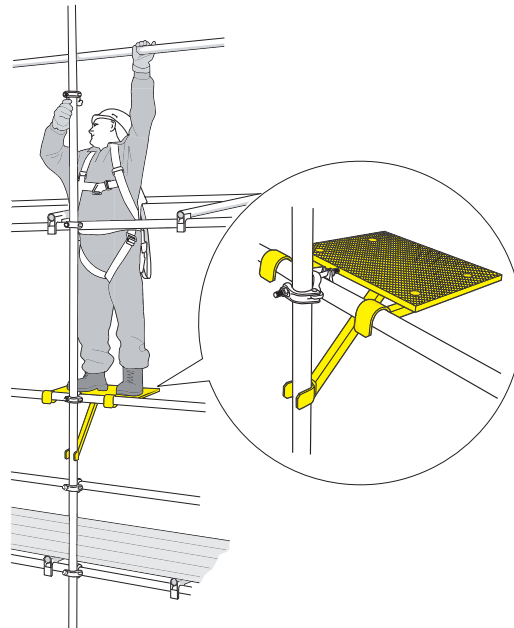


**Figure 11 – Advanced Guardrail System (Horizontal application)**

## 2.4 Step-up Device

The step-up device is a step system designed to provide the scaffolder with fall protection from the ledger above the place of work while installing the handrail for the next lift. This means that the scaffolder can erect and dismantle the scaffold safely while being protected by a guardrail which itself becomes part of the finished scaffold structure.

The step-up system is generally used in pairs with two employees working together, particularly on longer facades.



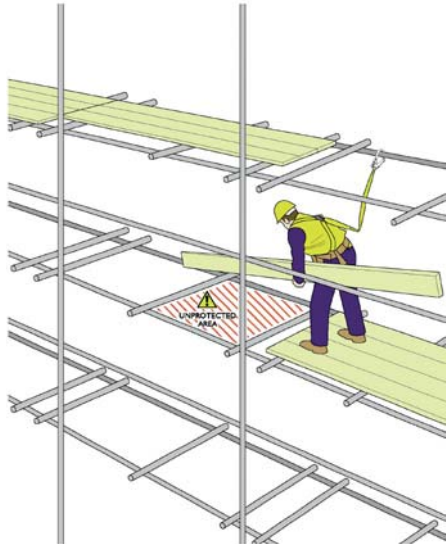
**Figure 12 – Step-Up System**

## 2.5 Scaffolders Working Platform

The scaffold platform should be fully boarded out, without gaps where a person could fall, except where access is required to a ledger below the lift for attaching fall arrest equipment.

A Scaffolders guardrail should be installed on all lifts at a minimum of 950mm and should **remain in place** in case of alterations and for dismantling.

When working from a Scaffolders platform (i.e. boarded and a minimum of a single guardrail), scaffolders do not need to be clipped on unless they are raising or lowering the working platform, or undertaking other non-standard tasks.



**Figure 13** – Scaffolder clipped on when raising boards due to the risk of a fall



**Figure 14** – Scaffolder working from a scaffolders working platform

In order to decide upon the risk control measures required when working at height, a suitable risk assessment of the work process should be undertaken. Risk assessments should be thorough and take account of the hierarchy of control and the probability and consequences of a fall. Where reasonably practicable, collective fall prevention methods and systems should be used ahead of reliance upon personal fall arrest equipment

### 3.0 FURTHER REFERENCE

The Work at Height Regulations 2005

NASC Guidance Note SG4:05. Preventing Falls in Scaffolding & Falsework

NASC User Guide SG4: You. Preventing Falls in Scaffolding & Falsework 2006

NASC DVD. SG4. Preventing Falls in Scaffolding & Falsework 2007

Collective Fall Prevention Equipment – Manufacturers guidance and recommendations

HSE Information Sheet MISC614 – Preventing falls from boom-type mobile elevating work platforms

HSE Information Sheet No 58 – The Selection and Management of mobile elevating work platforms

*Whilst every effort has been made to provide reliable and accurate information, we would welcome any corrections to information provided by the Writer which may not be entirely accurate, therefore and for this reason, the NASC or indeed the Writer, cannot accept responsibility for any misinformation posted.*