



## How to Avoid Falls From Heights

### What Causes a Person to Fall?

Falls from heights are the single most common cause of injuries and death in the construction industry. Most falls are preventable providing common sense is used and people think about what they are doing. The body has automatic systems which keeps balance through the centre of gravity line falling between the position of the feet. A fall may occur if the person's centre of gravity moves outside this position.

#### *Factors which can cause a fall*

A person may fall when:

- There is sudden acceleration or deceleration;
- Openings or holes are not protected or identified;
- Hand grip is lost;
- Open edges are not protected;
- Ladders are used incorrectly;
- They slip or trip;
- They are struck by a moving or falling object;
- They take risks without fall-arrest systems.

#### *Fall prevention strategy*

There are three steps to consider if working at heights:

- Identify the likely hazard of falling 3 metres or more. If this is likely, then a means to prevent a fall must be put in place.
- Assess the risk of injury to a person should a fall of less than 3 metres occur. If injury is likely, a safeguard should be in place to prevent it.
- Control the risks by having in place systems which will prevent the fall.

Having considered these steps, a process of elimination, isolation or minimisation can be implemented.

For detailed information about working safely at heights, OSH is preparing a guideline which should be available soon through your local branch OSH office.

### How Do Falls Happen?

Some of the situations that lead to falls are:

- Working on a scaffold or working platform without guardrails.
- Working above the guardrail without additional protection.
- Working in and around liftwells and stairway openings without guardrails.
- Working from ladders which are of poor quality, badly maintained, or incorrectly positioned and not secured top and bottom.
- Working on roofs constructed of brittle material.
- Riding on crane-suspended loads.
- Cleaning windows from narrow ledges without a safety harness and line.
- Working in an area where holes in the floor are not covered or protected by guardrails.
- Working from suspended scaffolds or elevated work platforms without safety belts or harnesses.
- Working on roofs without protection in place to prevent a fall.

In many cases, safety equipment or guardrails have been provided at the start of the job, but have been discarded, poorly maintained or simply not used.

A good example is when a section of perimeter guardrail is removed to allow access for materials to be landed on one level of a building. Once the materials have been unloaded, the guardrail is not replaced creating a hazard to any worker in the area.

### Ladder falls

Falls from ladders are a frequent cause of injury in the construction industry. Often this is because people do not observe basic safety rules or fail to use common sense. Falls are usually caused by overbalancing by trying to reach too far past the centre of gravity. If the ladder is not positioned correctly or tied or secured at the top, then a fall is likely to occur. Further information about the correct use of ladders is contained in the Construction Bulletin titled *Safe Ladder Use*.

### Scaffolding falls

Scaffolding of different types is used on most construction sites to provide a good working platform at any height. Often, however, safeguards to prevent workers falling from scaffolding and working platforms are abused or not used at all.

### Scaffolding safety checklist

When working from a scaffold ask yourself:

- Is the scaffold erected on a firm foundation?
- Are all guardrails in position and at the correct height?
- Are there enough planks to form the working platform?
- Are these planks secured in position?

- How far is it from the innermost plank to the workplace?
- How far is it from the outermost plank to the edge of the scaffold?
- What form of access is provided between platforms?
- Do you require a safety belt or harness?
- Have any scaffold ties been removed?

## Other working platforms or areas

If you have to work on a floor area with holes for service ducts, ensure these are covered and marked or have adequate perimeter protection and toeboards.

Similarly, ensure there are designed fixings in place if you are cleaning windows on a multistorey building and you are required to wear a safety harness—make sure you use it.

Don't wait for an inspector to tell you—it may be too late.

## Alertness is the key

Keeping your mind on what you should be doing and how you should be doing it is the most important thing you can do to avoid becoming another statistic.

## Statistics on Fatalities in the Construction Industry

### Comment

Recent research carried out by the ACC confirmed the international experience that workplace fatalities and occupational disease is over represented in the construction sector. Based on New Zealand figures, construction workers are three times more likely to be killed and twice as likely to be seriously injured as workers in other occupations. This is a serious indictment on the industry and requires a concerted effort by all within the industry and other agencies to correct. Table 1 provides the statistics for fatalities for the year ending 30 June 1998 in all sectors. Table 2 provides fatality figures for the construction sector for the years 1993 to 1998, highlighting falls.

Overseas research confirms that injuries, as distinct from deaths, cost about 10% of the wage bill for an average construction project or about 3% of the contract price. This, and the figures on fatalities, is powerful evidence that accident and injury prevention is a wise investment in the construction industry.

Table 1: Workplace Fatalities

| Industry                 | Fatalities, Year End: |           |
|--------------------------|-----------------------|-----------|
|                          | June 97               | June 98   |
| Agriculture              | 12                    | 15        |
| Forestry                 | 9                     | 9         |
| Construction             | 10                    | 17        |
| Factories and Commercial | 10                    | 15        |
| <b>Total</b>             | <b>41</b>             | <b>56</b> |

Table 2: Construction Sector Fatalities/Falls 1993-98

| Year ending 30 June | Total     | Fatalities Resulting from Falls |
|---------------------|-----------|---------------------------------|
| 1993                | 9         | 2                               |
| 1994                | 4         | 1                               |
| 1995                | 16        | 9                               |
| 1996                | 18        | 5                               |
| 1997                | 10        | 5                               |
| 1998                | 17        | 3                               |
| <b>Total</b>        | <b>74</b> | <b>25</b>                       |