

New regulations give the lowdown on high risks

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Engineers are being urged to adopt a 10-step action plan in preparation for new Work at Height Regulations due to come into force next year



In the autumn of 2004, new Work at Height Regulations will come into force implementing a European directive. The regulations will apply across all industries and will impact upon the world of engineering.

Work at height is defined by the regulations as any work where a person can fall and be injured (excluding falls on the level). Typically, this is seen as work taking place high up a ladder or on the roof of a building. However, in practice, it can also involve working just a short distance above the ground as the following accidents demonstrate:

- A maintenance fitter lost his footing on the second rung of a ladder and was killed when he fell backwards and hit his head on the floor;
- An engineer fell 0.9m from a work platform placed next to a machine, fracturing a wrist;
- An engineer was greasing a machine 0.5 m above ground when he slipped off the machine and fractured an arm.

The risk of injury extends beyond that associated with hitting the ground and includes, for example, injury from falling into hazardous chemicals or from falling onto dangerous parts of machinery.

Engineers who fall

A number of engineering professions have a high number of falls. Out of all occupations:

- Electrical fitters have the third greatest number of falls;
- Maintenance fitters have the fourth greatest; and
- Engineers (including mechanical, chemical and structural) have the 14th greatest number of falls (ahead of roofers at 16th).

The importance of falls from height is confirmed by their significant contribution to fatal and major injuries. Falls from height account for 40% of the fatal and major injury accidents to electrical fitters (equal to 660 per year); and 24% of the fatal and major injury accidents to maintenance fitters (equal to 950 per year).

Table 1 breaks this down into high

falls (falls of more than 2m), low falls (falls of less than 2m) and falls (height not known).

Significantly, table 1 illustrates that low falls account for more fatal and major injuries to fitters than high falls. Work less than 2m above the ground typically being seen as low risk, this is however, clearly not the case. Even where the work is high above the ground the risks are not always correctly perceived.

Table 2 identifies the main agents involved in falls to fitters for all severity of accidents. The use of ladders in particular stands out as a major cause of concern.

Looking ahead

Employers have always had a general duty to protect the health and safety of employees working at height. However, the Work at Height Regulations will be the first set of regulations to focus solely on work at height. As fitters/engineers have a high number of falls accidents, the regulations are likely to have particular significance for engineers; either by being directly involved in work at height or by overseeing others engaged in such work.

Under the regulations employers and the self-employed will be required to:

- make sure all work at height is properly planned, appropriately supervised and carried out safely;
- ensure anybody who works at height is competent to do so;
- avoid work at height where possible to do so;
- where it cannot be avoided to reduce the associated risk of injury;
- select work equipment, which is

suitable for the work to be done; and

- prevent falls through fragile surfaces.

Although the Work at Height Regulations are not due to come into force until autumn 2004, the risk of falls from height to fitters/engineers exists here and now. Engineers are therefore urged to take steps now to tackle this risk by implementing the 10-step action plan detailed below which brings the added advantage of gaining a head start in complying with the Regulations.

Action plan

Step 1 – raise awareness of the issue, without knowledge people will not appreciate the need for change. Engineers and Members can do this collectively (via the IIE) or individually in their own companies. In particular, there is a need to raise awareness of the following facts:

- work at height does not have to take place far above the ground;
- fitters/engineers have a high rate of falls – the risk of major injury is very real;
- low falls cause more major injuries to fitters/engineers than high falls;
- falls to fitters/engineers are dominated by falls from ladders/stapladders;
- the Work at Height Regulations, implementing a European directive, are

TABLE 1: PERCENTAGE OF MAJOR INJURY ACCIDENTS

	Maintenance fitter	Electrical fitter
High falls	9	15
Low falls	13	21
Falls	2	4
Total	24	40

TABLE 2: PERCENTAGE OF MAJOR INJURY ACCIDENTS

	Agent electrical fitter	Maintenance fitter	Annual total
Ladder/stapladder	317	199	516
Fall/access	27	37	64
Work area	27	30	57
Vehicle	20	32	52
Work platform	16	33	49
Access	14	19	33
Plant	6	23	29



Left and below: typically, work at height is defined as work taking place high up a ladder or on the roof of a building. In practice, it can involve working just a short distance above the ground



Above right: even where the work is high above the ground, risks are not always correctly perceived

on their way; and

- the risk of falls can readily be reduced

Step 2 – The extent and pattern of work undertaken at height will vary amongst from company to company. To ensure effective use of resources analyse your company's own fall accidents to form a basis of action and to identify priority areas.

Step 3 – Establish a policy for work at height by fitters/engineers. Include a management plan for reducing the risk of falls. Review the adequacy of any existing policy.

Step 4 – Verify all tasks involving work at height are identified (raising awareness of what work at height is and the importance of low falls being essential prerequisites).

Step 5 – Identify work at height that can be avoided – this is a key requirement of the forthcoming regulations. Look at the work of fitters/engineers and others. An engineering input is likely to be essential to bring about the process changes needed to avoid work at height. Examples of such changes include:

- relocating gauges, switches etc. for measuring/monitoring/control to ground level;
- changing sampling or checking procedures to be carried out remotely

from ground floor; and

- modifying plant or machinery to reduce ledges or surfaces where dust etc. collects at height and requires removing.

Step 6 – Verify all remaining work at height has been suitably risk assessed.

To be adequate the risk assessment will need to consider such issues as:

- access and egress to/from the work area;
- the work to be performed;
- the duration of the work and the frequency with which it needs to be carried out;
- the location of the work and whether it presents any additional risks e.g. from moving machinery, passing traffic, or from other work going on in the area;
- the surface to be worked upon, whether it is slippery, fragile etc;
- suitability of the work equipment in relation to: working conditions; duration and frequency of use; risks from installation and use of equipment; and the nature of the work and foreseeable loadings;
- the competence of the people carrying out the work and the supervision required; and
- whether fall protection equipment i.e. lanyards are needed in the event of something going wrong

Step 7 – Use the risk assessment to:

- identify required precautions;
- inform employees;
- organise and plan work to make sure it is safe; and
- identify the level of supervision needed, taking into account: complexity of work, the level of risk and employee competence

Step 8 – Make sure fitters/engineers who work at height are competent to do so. They must be able to identify unsafe situations or working practices and know what to do about it. This requires

a combination of: knowledge, training and experience.

The people who supervise this work must also be competent to do so.

Step 9 – Take steps to control the risk from ladders, e.g.:

- audit ladder use by fitters/engineers to identify all ladders used and the tasks they are used for;
 - assess suitability of use. Ladders should only be used for light duty work of short duration. Can other access equipment e.g. tower scaffold, cherry picker, be used more safely? If so, the Work at Height Regulations will require you to use it;
 - establish a company policy on use of ladders including tasks they can/not be used for. Assess adequacy of any existing policy;
 - train employees and supervisors in safe ladder use. Make sure to include the importance of positioning a ladder so it is one unit away from a wall for every four units up and the need for ladders to be tied wherever possible. Provide refresher training;
 - audit the condition of all ladders and their suitability for the task to be done safely; and
 - supervise and monitor the use of ladders to ensure ladder policy is followed and review its effectiveness.
- Step 10** – monitor and audit the effectiveness of the measures taken and carry out changes as appropriate.

Conclusion

The Work at Height Regulations are on their way and are of particular significance to engineers – IIE members – given the high number of falls to fitters/engineers. IIE members are therefore encouraged to prepare now for the Regulations by implementing the 10-step action plan. To facilitate the sharing of best practice members implementing the plan or taking other action on this, are urged to provide feedback of their achievements to Richard Armstrong, Manager Technical Affairs at the IIE either by phone: 020 7395 0267 or by e-mail: richard.armstrong@iie.org.uk

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- See also a report in the IIE Focus SIG pages of this issue of *Engineering Technology* concerning the Manufacturing SIG, Falls from Height Lecture and link to the presentation

