

## WORK EQUIPMENT

Employers have a general duty under Section 2 of the Health and Safety at Work Etc Act 1974 to provide and maintain machinery, equipment and plant that is safe. The regulations which all employers need to consider when buying, installing, selling and using equipment at work are The Provision and Use of Work Equipment Regulations (PUWER) 1998. Managers should ensure they are complying with PUWER if they wish to demonstrate they are meeting their obligation to provide work equipment that is safe. Where the regulations include an approved code of practice they are shown in italics, managers must ensure they comply with those requirements.

The definition of work equipment under the PUWER is very wide - ***'any machinery, apparatus, appliance or tool and also assemblies of components which are arranged or controlled so that they function as a whole'*** such as a bottling plant. The term work equipment would therefore include such items as the following:

Scalpels	Ladders	Butchers knives
Lawn Mowers	Hammers	Soldering Irons
Computers	Pressure Vessels	Dumper Trucks
Hoists	Lathes	Resuscitators
Overhead Projectors	Scaffolding	Cranes

Items, which would not be considered, as work equipment would be substances (slurry, cement, water), structural items (walls, stairs, roofs) and livestock. The definition of use under PUWER includes all activities involving the use of work equipment such as starting/stopping, repair, modification, maintenance and servicing and also includes cleaning and transportation of equipment.

PUWER lay out a series of measures which all employers must follow to ensure that work equipment is safe, these include:-

1. Suitability of Work Equipment (Regulation 4)- This requirement lies at the heart of the regulations and requires employers to address the safety of work equipment from three aspects:
  - (a) Its initial integrity - Regulation 4(1).
  - (b) The place and conditions in which it will be used - Regulation 4(2).
  - (c) The purpose for which it will be used - Regulation 4(3).

Regulation 4(1) - ***When selecting work equipment, employers should take account of ergonomic risks.*** Equipment must be suitable by design, construction or adaptation for the work it is provided to do, in practice this means when employers provide equipment they should ensure that it has been produced for the work to be undertaken and is used in accordance with the manufacturer's instructions. When selecting work equipment, employers should take into account of any ergonomic risks.

Regulation 4(2) - ***Employers should ensure that work equipment is installed, located and used in such a way as to reduce risks to users of work equipment and for other workers, such as ensuring that there is sufficient space between the moving parts of work equipment and the fixed or moving parts in its work environment. When determining the suitability of work equipment employers should ensure that where appropriate:***

- (a) ***All forms of energy used or produced: and***
- (b) ***All substances used or produced***

***Can be supplied and/or removed in a safe manner.***

This requires employers to assess the location in which the equipment will be used and any risks which may arise from particular conditions, for example, is the equipment to be used in a wet environment or a flammable atmosphere?

Regulation 4(3) - This requirement is concerned with the purpose for which the equipment will be used, equipment must be capable of performing the tasks to which it is put, for example lifting gear should only be used to lift weights for which it was designed.

2. Maintenance (Regulation 5) - The regulations require employers to maintain equipment in a safe condition. The level of maintenance will depend on the risk that would be presented if the performance of the equipment deteriorated, this will vary from simple checks on hand held tools to complex planned programmes of maintenance for complicated process plants. It is recommended that maintenance logs be kept, particularly for equipment, which requires planned preventive maintenance.
3. Inspection (Regulation 6) - ***Where the risk assessment under regulation 3 of the Management of Health and Safety at Work Regulations 1999 has identified a significant risk to the operator or other workers from the installation or use of the work equipment, a suitable inspection should be carried out. The extent of the inspection will depend on the potential risks from the work equipment. Inspection should include, where appropriate, visual checks, functional checks and testing.***

***Employers should ensure that persons who determine the nature of the inspections required and who carry out the inspections are competent to do so. Competent persons should have necessary knowledge and experience.***

***Where work equipment is of a type where the safe operation is critically dependent on its condition in use and deterioration would lead to a significant risk to the operator or other worker, you should arrange for suitable inspections to be carried out.***

***The frequency of inspections should be based on how quickly the work equipment or parts of it are likely to deteriorate and therefore give rise to a significant risk. This should take into account the type of equipment, how it is used and the conditions in which it is used.***

Where the safety of work equipment depends on the installation conditions, the work equipment must be inspected after installation and before it is used for the first time or after it has been installed at a new location or premises. The inspections are to ensure that the work equipment has been correctly installed and is safe to use.

Work equipment, which is exposed to conditions, which may cause deterioration and consequent danger as a result of deterioration, must be inspected at suitable intervals and whenever exceptional circumstances have occurred that may have had an adverse effect on the safety of work equipment. Inspections are to ensure that the work equipment is maintained in a safe condition and that defects are identified and remedial action taken promptly. Records of all inspections must be made and kept until the next inspection has been completed and recorded. No work equipment may leave an employers' undertaking or be used in the undertaking, if supplied by another person, unless there is accompanying physical evidence that the last inspection was carried out.

4. Specific Risks (Regulation 7) - Employers must ensure that where work equipment presents a specific risk to health and safety, the use and maintenance of such work equipment is restricted to designated persons who have received adequate training in the operations they have been designated to carry out. The hierarchy of measures, which should be followed to control risks, is:
  - (a) Elimination of the risk.
  - (b) Taking 'hardware' (physical) measures to control the risk such as the provision of suitable guards.
  - (c) Taking appropriate 'software measures' to deal with any residual risk such as safe systems of work and the provision of information, instruction and training.
  
5. Information and Instructions (Regulation 8) - Employers must provide employees with adequate information and instruction regarding the use of work equipment, employees should have easy access to the information and be able to understand it. Supervisors and Managers also require access to information pertaining to the use of equipment. Information may be made available verbally or in writing and should include:
  - (a) All health and safety aspects arising from the use of work equipment.
  - (b) Any limitations placed on the use of the equipment.
  - (c) Any foreseeable difficulties, which may arise, and methods for dealing with them.
  
6. Training (Regulation 9) - It must be ensured that employees who use work equipment receive adequate training so that they can do so safely, the level of training will depend on the risks to health and safety, which the equipment may present. The training of young people (those under 18) is particularly important because of their relative immaturity and unfamiliarity with the work environment.

An employer's obligation to train extends not only to those who use work equipment but also to those supervising and managing them. The Approved code of Practice specifically requires that employers:

  - (a) Ensure that workers who have received appropriate training in the safe driving of such work equipment only drive self-propelled work equipment, including any attachments or towed equipment.**
  - (b) All workers who use a chainsaw should be competent to do so. Before using a chainsaw to carry out work on or in a tree, a worker should have received appropriate training and obtained a relevant certificate of competence or national competence award, unless they are undergoing such training and are adequately supervised.**
  
7. Conformity with Community requirements (Regulation 10) - Employers have a duty to ensure that when first providing work equipment for use in the workplace it conforms with the requirements of the legislation implementing any product Directive which is relevant to the equipment. In practice this means ascertaining it meets EC Directives by checking the equipment bears a CE mark, not all equipment will possess a CE mark yet, until they do, the best course of action is to check if it meets BS EN standards
  
8. Dangerous Parts of Machinery (Regulation 11) - Employers must ensure that dangerous machinery is protected; measures must be taken to prevent access to any dangerous part or

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stop the movement of any dangerous part before a person can reach it.

All guards and protection devices must be:

(a) Suitable for the intended purpose.

(b) Well constructed of sound materials and of adequate strength.

(c) Maintained in an efficient working order and good repair.

(d) Such that they do not increase any risks to health and safety or obscure the view of the operating cycle.

9. Protection against specific hazards (Regulation 12) - Employers must take steps to control exposure to any 'specified hazard' arising from use of work equipment other than by personal protective equipment or information, instruction and training.

The specified hazards under PUWER are:

- (a) Falling or ejected articles or substances.
- (b) Component rupture or disintegration.
- (c) Equipment overheating or catching fire.
- (e) Explosion of equipment due to pressure build up
- (d) Unintended or premature discharges or explosions.

10. High or very low temperature (Regulation 13) - Protection must be provided from burns, scalds or sear injuries caused through contact with work equipment components, articles or substances which are of a high or very low temperature.

11. Controls and control systems (Regulations 14-18) - The regulations require that where appropriate starting and operating controls can only be operated by deliberate action. Stop controls must be readily accessible, as should emergency stop controls; also they must have priority over normal stop controls. All controls must be clearly visible and identifiable and appropriately marked where necessary.

12. Isolation from sources of energy (Regulation 19) - Employers must ensure that work equipment is provided with clearly identifiable and readily accessible means of isolating it from its source of energy where necessary.

13. Stability (Regulation 20) - All work equipment must be stabilised where necessary to protect health and safety, for example woodworking machinery should be bolted to the floor to prevent any unexpected movement during its operation.

14. Lighting (Regulation 21) - Suitable and sufficient lighting must be provided and this should take into account the operations carried out using particular pieces of equipment; the more perception of detail required the higher the level of lighting, this may only be necessary when repairs and maintenance are being carried out.

15. Maintenance operations (Regulation 22) - This regulation requires that equipment is constructed and adapted to allow maintenance work that involves a risk to health and safety to be carried out while the equipment is inactive. If machinery must be maintained while it is moving then it must be carried out in such a way that the person doing it is exposed to minimum risk, this could be achieved by the use of temporary guards, limiting the movement or speed of

machinery or by providing adequate personal protective equipment.

16. Marking and warnings (Regulations 23 & 24) - Where necessary work equipment should have appropriate and clearly visible health and safety markings such as the colour of a gas bottle indicates its contents. Warnings may be printed on equipment or may be graphic signs, in some cases an audible warning may be used; if this is so employees must be made aware of it and what action they should take on hearing it.
17. Employees carried on Mobile Work Equipment (Regulation 25) Employers ***should ensure that the risks to the operator and other workers due to the mobile work equipment travelling are controlled. Workers should be protected against falling out of the equipment and from unexpected movement. If work needs to be carried out during the journey, speeds should be adjusted as necessary. Employers should ensure that guards and /or barriers fitted to mobile work equipment, which are designed to prevent contact with wheels and tracks, are suitable and effective.***

Mobile work equipment must not be used to carry employees unless it is suitable for that purpose and measures to reduce any risk to safety have been taken, to reduce the risk as low as is practicable.

18. Rolling over of Work Equipment (Regulation 26) ***Employers should fit suitable roll-over protective structures to mobile work equipment where necessary to minimise the risk to workers carried, should roll-over occur. Employers should provide restraining systems on mobile work equipment, where appropriate, if they can be fitted to the equipment, to prevent workers being crushed between any part of the work equipment and the ground, should roll-over occur.***

***If a tractor is fitted with ROP rather than a cab, a restraining system will be needed. For fork lift trucks fitted with either a mast or roll-over protective structure, restraining systems should be provided, where appropriate, if such systems can be fitted to the equipment, to prevent workers carried being crushed between any part of the truck and the ground should it overturn.***

The risk of injury to employees riding on mobile work equipment must be minimised by:

- (a) Stabilising the work equipment.
- (b) Incorporating structures that restrict the work equipment from doing anything other than roll on its side or ensure sufficient clearance to any person being carried if it does roll any further. N B Fork lift trucks are exempt from this regulation.
- (c) Provision of any device offering comparable protection.

This regulation requires the fitting of suitable restraining systems to prevent anyone being carried on work equipment being crushed in the event of it rolling over.

19. Overturning of Fork Lift Trucks (Regulation 27)

Fork lift trucks used to carry employees must be adapted or equipped to reduce, as low as is reasonably practical, the risk to the employees' health and safety from overturning.

20. Self -propelled Work Equipment (Regulation (28)

Where there are risks to safety from self-propelled work equipment which is in motion, the regulation requires:

- (a) Features to prevent unauthorised start up.
- (b) The provision of appropriate facilities for minimising the consequences of collisions in situations where more than one item of rail mounted equipment is in motion at the same time.
- (c) Devices for braking and stopping.
- (d) Emergency facilities, operated by readily accessible controls or automatic systems, which are capable of stopping work equipment in the event of the main braking or stopping devices failing to work.
- (e) Devices for improving the driver's field of vision where the original field of vision is inadequate to ensure safety.
- (f) Appropriate lighting on the vehicle, if it is used at night or in areas of poor lighting

Appropriate fire fighting equipment, if the self-propelled work equipment carries or tows anything that may present a fire hazard and is liable to endanger employees.

21. Remote-controlled Self-propelled Work Equipment (Regulation 29)

Where there is a risk to health and safety from remote-controlled self-propelled work equipment, such equipment must stop automatically if it leaves its control range, and have devices to prevent risks from crushing or impact.

22. Drive Shafts (Regulation 30)

In situations where there is a risk to safety from the seizure of a drive shaft between mobile work equipment and any accessory or anything towed, there must be systems, which prevent such seizures, or measures which would prevent any adverse affect on an employee's safety eg the breakage of any attached component. Transmission shafts must be protected where they can become soiled or damaged through contact with the ground.

N B The provisions contained in Regulations 25-30 will not apply to work equipment provided for use prior to 5 December 1998, until 5 December 2002.

23. Power Presses (Regulations 32 -35)

These regulations are concerned with the safety of power presses and as such do not affect the I W Council. Any manager who requires information reading this subject should contact the health and safety section.

PUWER amplifies and makes more explicit duties on employers to provide safe plant and equipment; it cannot be considered in isolation and must be looked at together with other regulations, especially when conducting risk assessments.

The following regulations should be borne in mind when considering PUWER:

- Management of Health and Safety Regulations 1999
- Personal Protective Equipment at Work Regulations 1992
- Workplace (Health, Safety and Welfare) Regulations 1992
- Electricity at Work Regulations 1989
- Noise at Work Regulations 1989
- Control of Substances Hazardous to Health Regulations 2002