

Machinery Guarding

Machinery has the potential to cause severe and fatal injuries. It is estimated that half of machinery accidents arise during maintenance. Machines with well designed guards will discourage users from attempting to bypass the guarding, which in turn can eliminate risk of injury and lead to greater operating efficiency for the business. Since the Provision and Use of Work Equipment Regulations 1998 (PUWER) attracts strict civil liability, personal injury claims associated with work equipment will often succeed. Hence investing in proper guarding and systems will pay dividends via an improved accident and claims experience, notwithstanding the potentially serious consequences of criminal charges and moral issues.

MINIMUM STANDARDS

- New machines and safety components such as guards must comply with the Essential Health and Safety Requirements of The Supply of Machinery Regulations 2008 and carry a CE mark. This however, is not a guarantee of safety, and more needs to be done to satisfy legal requirements such as required under PUWER.
- The operation, servicing and maintenance of machinery should be subject to risk assessment. Common hazards of machinery include operator entanglement and being hit by ejected materials. When introducing controls, consequential risks such as maintenance, falls from height, noise, hazardous substances, ergonomics and manual handling should be considered.
- Consult and implement the strict hierarchy of machine guarding under PUWER i.e.
 - the provision of fixed guards enclosing every dangerous part or rotating stock-bar where and to the extent that it is practicable to do so, but where or to the extent that it is not, then
 - the provision of other guards or protection devices where and to the extent that it is practicable to do so, but where or to the extent that it is not, then
 - the provision of jigs, holders, push-sticks or similar protection appliances used in conjunction with the machinery where and to the extent it is practicable to do so, but where or to the extent that it is not, then
 - the provision of information, instruction, training and supervision.
- Machine users are consulted such that guarding allows machines to be loaded, unloaded, cleaned and maintained without exposure to hazards.
- The health and safety management system will define safe systems of work/ work instructions on the safe use and maintenance of machinery. Training based upon these instructions will be provided, recorded and users' competence validated. Compliance is monitored and audited.

GUIDANCE AND STANDARDS

The requirements of PUWER should be consulted via the Approved Code of Practice "Safe use of work equipment. Provision and Use of Work Equipment Regulations 1998" L22 HSE Books 2008 ISBN 9780717662951[5]. Requirements for power presses and woodworking machinery are dealt with in two separate Approved Codes of Practice.

There are numerous standards for machine guarding and machine specific standards, also known as Type C standards should be researched and consulted where they exist. The main standards are:

- BS EN ISO14121-1:2007, "Safety of machinery – Principles for risk assessment"
- BS-EN953:1998, "Safety of machinery – Guards – General requirements for the design and construction of fixed and movable guards".
- BS EN294:1992, "Safety of machinery – Safety distances to prevent danger zones being reached by the upper limbs".
- BS EN811: 1997, "Safety of machinery – Safety distances to prevent danger zones being reached by the lower limbs".
- BS EN1088:1995, amended in 2007, "Safety of machinery – Interlocking devices associated with guards, principles for design and selection".
- PD5304:2005, "Guidance on safe use of machinery" – although not a standard this is a BSI published document based on BS5304:1998 and contains a wealth of useful guidance and practical examples of guard designs.
- INDG271, "Buying New Machinery" [Download](#)
- INDG229, "Using Work Equipment Safely" [Download](#)

For further information contact RM@uk.qbe.com