

## **CARDIFF COUNCIL**

### **CODE OF GUIDANCE**

#### **LIFTING OPERATIONS AND LIFTING EQUIPMENT REGULATIONS 1998** **(LOLER 1998)**

#### **PURPOSE**

The purpose of this Code of Guidance is to outline the requirements to be met to ensure that “duty holders” comply with the requirements of the legislation enabling end users of the equipment to use it safely.

The Code of Guidance addresses the following:

- 1.0 Definitions
- 2.0 Equipment which the legislation covers
- 3.0 Relationship with other legislation
- 4.0 Suitability of equipment
- 5.0 Strength and stability
- 6.0 Lifting equipment used for lifting people
- 7.0 Positioning and installation
- 8.0 Marking of lifting equipment
- 9.0 Organisation of lifting operations
- 10.0 Examination and testing
- 11.0 Reports and defects

#### **1.0 Definitions**

- 1.1 “Lifting equipment”, work equipment for lifting or lowering loads and includes its attachments used for anchoring, fixing or supporting it.
- 1.2 “Accessory for lifting”, work equipment for attaching loads to machinery for lifting.
- 1.3 “A load”, includes any material, people or animal (or any combination of these) that are lifted by the lifting equipment.
- 1.4 “Safe working load” (SWL), a value or set of values based on the strength and/or stability of the equipment when lifting. A range of safe working loads can be specified for the same equipment when used in different configurations.
- 1.5 “Competent person”, a person with appropriate practical and theoretical knowledge and experience of the lifting equipment to be examined as will enable them to detect defects and weaknesses and to assess their importance in relation to the safety and continued use of the equipment. The competent person must be sufficiently independent and impartial to allow objective decisions to be made.

- 1.6 “Thorough examination”, a thorough examination by a competent person. (See section 10.0 for further information)
- 1.7 “Examination scheme”, a suitable scheme drawn up by a competent person for such thorough examination of the lifting equipment at such intervals as may be appropriate. The role of a “competent person” for Cardiff Council is undertaken by Plant Safety Ltd.

## **2.0 Equipment which the legislation covers**

2.1 Lifting equipment includes any equipment used at work for lifting or lowering loads.

2.1 Examples of the type of equipment and operations include (both lists below are non-exhaustive):

- a passenger lift in an office block
- a rope and pulley used to raise a bucket of cement on a building site
- a dumb waiter in a restaurant or hotel
- a vacuum lifting crane
- a vehicle inspection hoist
- a scissor lift

2.2 The Regulations apply to a range of other lifting equipment which present risks which are similar to those associated with the “traditional” equipment listed above:

- ropes used for climbing or work positioning during arboriculture
- paper roll hoist on a printing machine
- front end loader of a tractor
- a bath hoist used for lifting a resident in and out of a bath
- a loader crane fitted to a lorry for delivery duties
- a refuse vehicle loading arm used for tipping
- an air cargo elevating transfer vehicle
- vehicle tail lifts (including minibuses)
- beam apparatus in gymnasia
- hoist for lifting persons in /out of swimming pools
- hoist for lifting persons for washing / changes to clothing / physiotherapy treatment

## **3.0 Relationship with other legislation**

3.1 Lifting Operations and Lifting Equipment Regulations were made under the Health and Safety at Work etc Act 1974 (HASAWA) and apply to all work situations and premises subject to HASAWA.

- 3.2 There is an important link with the Provision and Use of Work Equipment Regulations 1998 (PUWER). PUWER imposes a requirement on duty holders to provide suitable work equipment for the task, information, instruction and training to the people who use it; undertake measures concerning dangerous parts of machinery, install suitable controls, ensure periodic maintenance is carried out, ensure the stability of the equipment and additional measures if the equipment is mobile. Duty holders who provide lifting equipment will need to comply with all the relevant aspects of PUWER in addition to LOLER.
- 3.3 For any lifting operation a risk assessment is required to identify the nature and level of risks associated with the operation and to comply with the requirements of the Management of Health and Safety at Work Regulations 1999 (MHSWR)
- 3.4 The risk assessment may identify significant risks, which may be controlled by the provision of personal protective equipment. In this instance the requirements of the Personal Protective Equipment at Work Regulations 1992 (PPE) will need to be considered.
- 3.5 Warning signs may be needed to warn anyone who may be affected by the lifting operation and signals may be used to guide a lifting operation. Both signs and signals used will need to comply with the Health and Safety (Safety Signs and Signals) Regulations 1996.

#### **4.0 Suitability of equipment**

- 4.1 When selecting lifting equipment the ergonomic risks should be taken into account. Operating positions, working heights, reach distances etc can be adapted to accommodate the intended operator. The operation of the equipment should not place undue strain on the operator. The operator should not be expected to exert undue force or stretch or reach beyond their normal strength or physical reach limitations.
- 4.2 The selection of lifting equipment should be looked at from three perspectives:
- the initial integrity
  - the place where it will be used
  - the purpose for which it will be used
- 4.3 The material from which the equipment is constructed must be suitable for the environment in which it is to be used. All materials have unique physical properties and will behave in different ways depending on the conditions to which they are exposed.
- 4.4 Where lifting equipment or its load may be affected by high winds, the equipment should be fitted with devices to detect dangerous situations, give warning to the operator and allow measures to be taken to cease using the equipment.

- 4.5 Where access or egress to or from any part of the lifting equipment is required, a safe way of doing so must be provided. Permanent means of access are preferable to relying on temporary means. Any permanent means of access must not affect the strength or stability of the equipment, the manufacturer of the equipment should be consulted before effecting the modifications.
- 4.6 Where, for the purposes of operation, maintenance or inspection, a person is required to be present on any part of the lifting equipment, particularly if a platform, measure must be taken to minimise the risk of slips, trips and falls. The platform must be of adequate size and strength with any openings in floor areas adequately covered or fenced. Where there is a risk at the workplace of falling more than 2m there must be suitable edge protection. Where edge protection needs to be removed to undertake the lifting operation then it must be replaced as soon as possible.
- 4.7 If employees are likely to be exposed to a harmful environment during the lifting operation, whether this be due to the weather, harmful substances or excessive noise some form of protection should be provided to protect the worker without resorting to PPE. Typically this could be achieved by the provision of cab or cabin.

## **5.0 Strength and stability**

- 5.1 The lifting equipment should have adequate strength for the proposed use, this would need to take account of the forces to which the equipment will be subject and the weight of any associated accessories used in the operation. The equipment should incorporate appropriate safety factors against failure under foreseeable failure modes. If in doubt the manufacturer of the equipment should be contacted.
- 5.2 An account of any destabilising forces that may affect the stability of the lifting equipment must be considered before the lifting operation. A number of factors can affect the stability of the equipment including:
- the strength of the ground
  - stability of the surface
  - angle of the surface
  - size and nature of the load
  - how the load will be lifted
  - wind loading
- 5.3 If any lifting equipment is to be anchored to other work equipment or structure, this equipment or structure must be able to withstand the loads placed on it.
- 5.4 If there is a risk of overturning or overloading of the equipment, it must be fitted with appropriate warning devices such as rated capacity

indicators and limiters. These devices should be fitted with audible and /or visual warning when the limits are being approached.

## **6.0 Lifting equipment used for lifting people**

6.1 People should only be lifted or lowered using equipment, which has been specifically designed for the purpose. In exceptional circumstances equipment such as fork lifts and telescopic handlers can be used for lifting or lowering people provided that they are equipped with suitably designed carriers.

6.2 A carrier includes:

- the car of a passenger lift
- the cage of construction site hoist
- a platform on a mobile elevating work platform (MEWP)
- a cradle suspended from the hook block of a crane
- a bosuns chair
- the harness used by an arborist

6.3 In order for a person to be protected from being injured by something outside a lift car it should normally be fully enclosed when in use. It should have appropriate protective devices fitted to prevent a person being injured when entering or leaving the car. All cars must be fitted with suitable devices to prevent it from free fall and other carriers should have similar devices fitted if practicable to prevent injury in the event of a failure of the primary means of support e.g. multiple ropes, multiple cylinders, ropes, chains or hydraulic pipes with a high factor for safety, safety gear and check valves for hydraulically powered systems.

6.4 Carriers which are not fully enclosed and where there is a risk of falling more than 2m should be fitted with suitable edge protection. Edge protection may be needed if there is a risk of falling less than 2m if there is a risk of serious injury.

6.5 The edge protection must be suitable and securely fitted to the carrier. The floor of the carrier should be slip resistant.

6.6 A reliable means of rescue should be provided in the event of a malfunction of the equipment whether this is by an emergency means of lowering the carrier or by self-rescue equipment. Any communication devices provided to summon assistance should be inspected regularly by a competent person.

## **7.0 Positioning and installation**

7.1 The lifting equipment must be installed or positioned in such a way as to prevent the equipment or the load striking people, or from the load

drifting, falling freely or being released unintentionally. The need to lift over people should be minimised.

- 7.2 Equipment should be installed so as to prevent crushing while it is at its extreme positions.
- 7.3 The elimination of trapping points must be an objective to aim for when installing lifting equipment, which has a travelling, or a slewing motion. If this is not possible, access must be restricted.
- 7.4 Methods of preventing loads from falling are similar to those described above to prevent the free falling of carriers in the event of a failure of the primary means of support.
- 7.5 Lifting equipment, which moves loads along a fixed track at a height of less than 2m, should be enclosed or fitted with an effective means of preventing contact with the underside of the equipment or anything attached to it.
- 7.6 In the event of a power failure, if the equipment will not be able to maintain the load, appropriate measures will need to be taken to prevent people being exposed to consequential risks.
- 7.7 Hooks provided for lifting must be of a type which reduces the risk of the load becoming displaced.
- 7.8 Where two or more items of lifting equipment are being used they must be installed or positioned to avoid collision.

## **8.0 Marking of lifting equipment**

- 8.1 All lifting equipment and associated lifting accessories must be marked to indicate their safe working load (SWL). If it is not possible to mark the equipment a coding system should be used which easily provides the user with the SWL e.g. colour coding or labelling.
- 8.2 Where equipment has a safe working load which is variable depending on its operating radius, it should be clearly marked and the operators provided with adequate information regarding the corresponding safe working loads.
- 8.3 Equipment should be fitted with rated capacity indicators (RCI) and limiters if the use of the machinery results in significant risks being generated.
- 8.4 Where the weight of a lifting accessory is significant in relation to the safe working load of a machine then the accessory should be marked to indicate its weight.

- 8.5 Any lifting equipment which may be dismantled should be marked to indicate the equipment of which it is a part.
- 8.6 If the configuration of an accessory can affect the safe working load e.g. two chains linked together, it should be clearly marked by a tag, a plate or chart should be available providing the user with information on the safe working load.
- 8.7 Any carrier of people should clearly display the safe working load and the maximum number of person to be carried.
- 8.8 Any lifting equipment which could inadvertently be used for carrying people should be clearly marked that it is not to be used for lifting people.

## **9.0 Organisation of lifting operations**

- 9.1 It is an absolute duty on every employer to ensure that any lifting operation involving lifting equipment is:
- properly planned
  - appropriately supervised
  - carried out in a safe manner
- 9.2 The risk assessment undertaken under the Management of Health and Safety at Work Regulations 1999 will have identified the hazards and corresponding risks. The planning of the lifting operation will therefore need to address how these identified risks will be eliminated or adequately controlled.
- 9.3 A competent person will need to develop a plan addressing the suitability of the equipment needed to perform the lift, allocation of responsibilities and the safe execution of the lift itself. A written plan should be drawn up if two or more items of lifting equipment are used simultaneously.
- 9.4 The level of supervision of any lifting operation should be commensurate with the degree of risk and the experience or lack of it amongst the employees taking part.
- 9.5 A safe system of work should be developed whenever loads need to be carried or suspended over areas where people may need to be present. Where it is necessary to leave loads suspended access to the danger zones should be prevented and the load properly secured.
- 9.6 If the operator of the lifting equipment cannot see the full path over which the load is to be transported either directly or by means of auxiliary device e.g. closed circuit TV, then an adequate system of communication between the operator and a signaller or banksman is required to avoid the load making contact with anything including

people. Communication may be by radio, telephone or hand signals. If hand signals are used then they should be consistent with the code of signals in Schedule 1 of the Health and Safety (Safety Signs and Signals) Regulations 1996 or meet the requirements of BS 6736 *Code of Practice for hand signalling used in agricultural operations* or BS 7121 *Code of practice for safe use of cranes* which are referred to in Schedule 2 of the same Regulations.

- 9.7 The person who attaches and detaches the load to and from the lifting equipment should have the necessary competence to select suitable lifting accessories, be familiar with their use, care, maintenance and be aware of the limitations of the equipment.
- 9.8 The use of lifting equipment in the open air should cease if the weather conditions deteriorate to such an extent that it could affect the integrity of the lifting equipment or expose persons to danger.
- 9.9 Lifting equipment should only be used where there is sufficient headroom and space to safely position or install the equipment e.g. sufficient space to deploy outriggers.
- 9.10 Operators of lifting equipment should be sufficiently experienced in its operation to know in what kind of situations and performing what kind of task would cause the equipment to overturn. For routine lifting operations the operator will be able to estimate the weight of the load. There will be some situations where calculations will need to be made to find out the weight of the load. As a general rule items should not be dragged using lifting equipment as there is the potential for the items to become snagged, raising the safe working load and causing the equipment to overturn.  
Measures to minimise the risks of collision with other objects in the proximity of the lifting equipment should be taken.
- 9.11 Where anyone is working near the wheel tracks of an overhead crane, the crane should not be allowed to approach within 6m of them if they were liable to be struck by it.
- 9.12 As a general rule no lifting equipment should be brought closer than 15m to overhead power lines suspended from steel towers or 9m to overhead power lines supported by wooden poles. Specific advice is available from HSE Guidance Note *Avoidance of danger from overhead electric power lines* GS6
- 9.13 Although the safe working load may be marked on a piece of lifting equipment, it may be necessary to reduce this value to take account of where and how the equipment is being used. This is often referred to as “derating”. It is essential that the operator has sufficient expertise to judge when derating might be necessary.



9.14 The operator of lifting equipment should have received sufficient training, information and instruction to enable him to undertake pre-use checks before the equipment is used by the operator during each working day or at the beginning of every shift. The pre use checks are essential to identify faults due to day-to-day wear and tear and malfunction of safety related equipment.

## **10.0 Examination and testing**

10.1 Thorough examination may be required at several points during the life of lifting equipment:

- on initial use or following installation
- periodically during its life
- following certain exceptional circumstances

10.2 Evidence of a thorough examination should be obtained before lifting equipment for the first time. This examination should be undertaken by a competent person (see definitions Section 2). New equipment will not need a thorough examination as it is assumed to have been undertaken by the manufacturer or supplier and confirmed in the Declaration of Conformity. Equipment bought second hand, which has a current certificate of thorough examination, will not need to be examined again unless the installation of the equipment has a bearing on its safe operation (see below).

10.3 The extent of the examination will be determined by an assessment of the risks based on the type of lifting equipment, where it is installed and how it is to be used. Where a piece of equipments safety depends on the installation conditions, it needs to be thoroughly examined initially to ensure that is installed and safe to operate before it is put into service for the first time. If lifting equipment is subsequently moved to another location e.g. tower crane, then it should be thoroughly examined again before use. If pre-owned lifting equipment is obtained from another employer or if an employer sells on a piece of lifting equipment, the equipment must be accompanied by a current certificate of thorough examination.

10.4 Equipment, which may deteriorate more quickly due to the environment to which it is exposed, may require more frequent thorough examination.

10.5 Any event, which may affect the safe working of the lifting equipment, should result in a thorough examination being undertaken e.g. long periods out of use, involvement in a dangerous occurrence.

10.6 The requirement for thorough examination applies to lifting accessories as well as larger items of plant.

- 10.7 Lifting equipment should be thoroughly examined at intervals no longer than those specified in LOLER or shorter intervals if the competent person considers this appropriate, or in accordance with the intervals specified in the examination scheme for the equipment.
- 10.8 Thorough examination timescales specified in LOLER:
- at least 6 monthly for lifting equipment used for lifting persons or an accessory for lifting
  - at least 12 monthly for other lifting equipment
  - in either case in accordance with an examination scheme
  - each time that exceptional circumstances which are liable to jeopardise the safety of the equipment have occurred
  - if appropriate, the equipment should be inspected by a competent person at intervals between thorough examinations
- 10.9 If an employer is unable to produce a written examination scheme for lifting equipment within his control, when requested to do so by an inspector from the relevant enforcing authority, it will be assumed that the timescales detailed by LOLER will be followed and that the employer will be able to produce current examination reports.

## **11.0 Reports and defects**

- 11.1 The examination report will need to contain the following information:
- the name and address of the duty holder for whom the thorough examination was made
  - the address of the premises at which the thorough examination was made
  - sufficient information to identify the equipment
  - the date of the last thorough examination
  - the date when the next thorough examination is due
  - the safe working load of the equipment/the safe working load for each configuration of equipment
  - if it is the first examination after installation or assembly the report should say this and that it has been installed correctly and safe to operate
  - the time scale with which the equipment is being examined i.e. within 6 months/12 months/exceptional circumstances etc. and that the equipment is safe to operate
  - identification of defective parts
  - particulars of any repair, renewal or alteration required
  - in the case of a defect which is not yet but could become a danger, the time scales involved and particulars of any repair required to remedy it.
  - the latest date by which the next thorough examination must be carried out, particulars of any tests undertaken and the date of the examination

- the name, address and qualifications of the person making the report, whether he/she is self employed or employed and the name of his/her employer
  - the name and address of the person signing or authenticating the report on behalf of its author
  - date of the report
- 11.2 The competent person undertaking the thorough examination must submit the report to the duty holder for action, normally within 28 days of the examination. In certain circumstances the competent person is required to submit a copy of the report to the enforcing authority, this applies where there is a risk of imminent personal injury.
- 11.3 Reports of thorough examination should be kept available for inspection:
- until he ceases to use the equipment
  - in the case of a lifting accessory, for 2 years after the report is made
  - until he ceases to use the equipment at the place it was installed or assembled
  - in the case of equipment exposed to conditions, which could cause deterioration, until the next report is made, or the expiration of 2 years whichever is the later
  - until the next report is made
- (See Regulation 11(2) of LOLER for further information)
- 11.4 Copies of reports may be kept as hard copies, electronically or on computer disk, ideally at the place where the lifting equipment is being used. The system should be capable of providing a written copy when necessary. It is permissible to keep records elsewhere, when circumstances dictate that this may be necessary, but they have to be readily accessible.
- 11.5 Reports may be kept as long as the duty holder wishes if this forms part of management arrangements for controlling lifting equipment.

**Further information:**

Safe use of lifting equipment. Lifting Operations and Lifting Equipment Regulations 1998 Approved Code of Practice. L113

Safe use of work Equipment. Provision and Use of Work Equipment Regulations 1998. Approved Code of Practice and Guidance. L22

Management of health and safety at work. Management of Health and Safety at Work Regulations 1999. Approved Code of Practice. L21

Personal protective equipment at work. Guidance on Regulations. Personal Protective Equipment at Work Regulations 1992. L25

Safety Signs and Signals. The Safety Signs (Safety Signs and Signals) Regulations 1996. Guidance on Regulations. L64

Code of practice for safe use of cranes. BS 7121-1 Part 1:General:1989 (Amended 1996)

Code of practice for hand signalling for use in agricultural operations. BS 6736:1986

Avoidance of danger from overhead electric power lines. GS6 (Third edition) 1997.