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H & S Guidance - Lifting Operations and Equipment

Health and Safety Information

(See also: **Management of Health & Safety ; Fork Lift Trucks ; Warehousing ; Work Equipment**)

INTRODUCTION

The Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) came into force in December 1998. They apply in all work premises and work situations subject to the Health and Safety at Work etc. Act 1974. The Regulations replaced most of the existing law relating to the use of lifting equipment. The Regulations are aimed at equipment such as cranes, lifts and hoists, and components including chains, ropes, slings, hooks, shackles and eyebolts. Examples of equipment covered include a passenger lift, a dumb waiter, a vehicle inspection hoist and a scissors lift. There is also an important link with the Provision and Use of Work Equipment Regulations 1998 (PUWER) which apply to all work equipment, including lifting equipment. There is an associated Approved Code of Practice and Guidance (Booklet L113) which has been used to produce this Element.

SUITABILITY OF LIFTING EQUIPMENT

Need to consider ergonomic risks when selecting lifting equipment. Material of manufacture needs to be suitable for conditions of use. Means of access/egress need to be safe and suitable. Need to minimise risks from slips, trips and falls from any part of the lifting equipment (e.g. cover or fence any floor openings, suitable edge protection where there is a risk of falling more than 2m, or less than 2m where there are other relevant risk factors involved). Adequate protection for operators (from adverse environmental conditions). Where affected by high wind, need to fit devices to detect dangerous situations (most commonly this would be an anemometer).

STRENGTH & STABILITY

Equipment must have adequate strength for the proposed use, with an appropriate factor of safety against failure. Equipment must also have adequate stability for its proposed use. Where appropriate, sufficient resistance to overturning must be provided



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to be put in place and operating effectively before the equipment is used. Lifting equipment with rails are also covered (devices to remove loose material etc.). Mobile lifting equipment with pneumatic tyres to be inflated to the correct pressure. Means to check this should be supplied. Where there is a significant risk of overloading, need to provide devices such as rated capacity indicators and limiters.

LIFTING EQUIPMENT USED FOR LIFTING PERSONS

Work equipment used for raising/lowering people should be specifically designed for the purpose. There are some very limited exceptions but even with these all necessary precautions to ensure safety (including supervision) must be taken. Such equipment may include lift trucks, telescopic handlers and cranes. Guidance on suitable precautions is given in booklet L113. Persons being carried (e.g. in a lift car) should be protected from being injured by something outside of it (i.e. fully enclosed when in use). Persons working from a carrier need to be protected by suitable edge protection; floor to be slip resistant. Lifts cars to have devices to prevent free-fall, independent of the means of suspension of the car. Where practicable, other carriers to have devices etc. to prevent the carrier falling in the event of the failure of the primary means of support. In the event of malfunction, persons being lifted must not be exposed to danger and a reliable means of rescue must be available (incorporating means to summon assistance, emergency means of lowering the carrier or self-rescue equipment).

POSITION & INSTALLATION

Lifting equipment must be positioned or installed in such a way as to minimise risk of a person being struck or the load moving in an uncontrolled manner.

Need to minimise the need to lift loads over people and prevent crushing when the equipment is in its extreme position.

Path of travel (where fixed) to be protected by suitable enclosure.

Wherever possible, hooks and other similar devices used for lifting to either have safety catches fitted or be shaped to prevent the accidental displacement of the sling etc.



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Where 2 or more items of lifting equipment are used they, or their loads, should be prevented from coming into contact with each other.

Suitable gates must be provided at any access/egress points to any hoistway or shaft enclosure; also fitted with efficient interlocking.

MARKING OF LIFTING EQUIPMENT

Lifting machinery and accessories to be marked with their safe working load (SWL). Where it is not practicable to mark the equipment itself, a coding system should be used to provide the user with the SWL (e.g. colour coding, label). This also applies where the SWL is dependent upon varying configurations (e.g. forklift truck fitted with attachments).

Where a significant hazard arises from the use of the machinery it should be provided with appropriate equipment or devices such as rated capacity indicators/ limiters.

Accessories for lifting include single item (e.g. a shackle) or an assembly of items (such as a lifting beam and slings). Accessories include slings, shackles, swivel or eyebolts, clamps, lifting magnets, vacuum lifters and lifting beams.

Any carrier of persons should display the maximum number of persons to be carried in addition to the SWL.

ORGANISATION OF LIFTING OPERATIONS

Lifting operations need to be:

- properly planned;
- appropriately supervised; and
- carried out in a safe manner.

The person planning the operation should have adequate practical and theoretical knowledge and experience of planning such operations.



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The plan must address:

- the risks identified;
- the resources required; and
- the procedures and responsibilities involved.

Where two or more items of lifting equipment are used simultaneously to lift any load, where appropriate a written plan should be drawn up and applied.

Proper planning is a combination of:

- (i) **initial planning** - to ensure that the equipment is suitable (with regard to consideration of the load to be lifted, its weight/shape/centre of gravity/availability of lifting points), its travel, frequency of use, environment of use, personnel available and their knowledge, training and experience).
- (ii) planning of **individual lifting operations** - for routine operations this will normally be a matter for the people using the equipment (e.g. the fork lift truck operator). An example of a simple plan is given on page 34 of L113.

For routine operations, an initial plan may only be required once but it may need review occasionally to ensure it is still valid (e.g. forklift trucks in a warehouse). For complex operations a plan may be needed each time it is carried out.

Supervision should be proportionate to the risk and determined by the nature of the work and the competence of the personnel involved.

Where practicable, loads should not be carried or suspended over areas occupied by persons. Where this is not practicable, need to establish a safe system of work to minimise the risk to persons who may need to be below the load.

Operators of lifting equipment must be able to see the full path of the load or have a responsible person with an appropriate means of communication to guide him/her.

Lifting accessories must be compatible with the load and used in a safe manner. The person attaching or detaching the load (or some other authorised person) must give their authorisation before the equipment is operated.

Lifting equipment must not be used in the **open air** where



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weather conditions could affect the integrity of the equipment or expose persons to danger.

Lifting equipment should not be used in a manner likely to cause it to overturn.

Steps should also be taken to minimise risks from **“proximity” hazards** (e.g. overhead power lines, other equipment/ structures, racking). An appropriate traffic management system would be useful in many instances.

Where appropriate, the SWL should be reduced to take into account the environment and mode in which it is being used (termed “derating”). Examples include using a carpet boom on a fork lift truck and the way a sling is attached to a load (i.e. the angle of its legs).

Employees should be given appropriate training and instruction.

Lifting accessories must be stored in conditions that do not lead to damage or deterioration.

THROUGH EXAMINATION & INSPECTION

Issues involved include:-

- (i) Competent person - this should be someone with appropriate practical and theoretical knowledge and experience of the particular lifting equipment. Should be independent and impartial.
- (ii) Thorough examination - equipment which requires a thorough examination should be identified and thoroughly examined as required. The risks arising from failure will determine how thorough the examination needs to be.

Thorough examination may be needed at several points in the life of lifting equipment. Before you use any item of lifting equipment for the first time, unless you have received physical evidence that a thorough examination has been carried out and it is safe to use, it should be thoroughly examined by a competent person.

LOLER requirements are:-

- This covers the initial thorough examination. In the case of new equipment, the 'thorough examination' is considered to have been carried out by the manufacturer or supplier and confirmed in the Declaration of Conformity.



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- A thorough examination is required after substantial or significant modification or repair.

Reg 9(2)

- This covers installation in a new location or a reconfiguration.

Reg 9(3)(a)

- The lifting equipment should be thoroughly examined at intervals specified in the Regulations (see below) or shorter intervals if the competent person considers this appropriate, or in accordance with the intervals specified in the examination scheme for the equipment. (the specified period and examination scheme approaches respectively).
- The specified periods are:-
 - (i) lifting equipment for lifting persons, or an accessory for lifting, **AT LEAST EVERY SIX MONTHS.**
 - (ii) other lifting equipment, **AT LEAST EVERY 12 MONTHS.**
- The examination scheme may be drawn up by any competent person. The scheme should identify and specify which parts should be thoroughly examined, the intervals between examinations and, where appropriate, those parts that need to be tested.

The competent person should be informed of any changes in the use of the equipment that may affect the examination scheme.

Different items or parts of the lifting equipment may be thoroughly examined at different intervals. The time between thorough examinations should be reviewed by the competent person periodically.

Examples of equipment likely to require a thorough examination include forklift trucks, lifts, cranes and vehicle inspection hoists.

Reg. 9(3)(b)

Where a risk assessment identifies a significant risk to the operator from the use of the lifting equipment a suitable inspection should be carried out, the frequency and extent of which depends on the potential risk. The inspection should include, where appropriate, visual checks and functional tests.



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The persons who determine the nature of the inspections required and carry out the inspections must be competent. Examples of lifting machinery which may require regular inspection are forklift trucks, hoists, automated stacking equipment etc.

Reg. 9(4)

Lifting equipment must not leave a business or (if obtained from the undertaking of another person) be used in a business unless it is accompanied by physical evidence (e.g. a paper copy of the last examination report) that the last thorough examination required has been carried out.

Reg. 10 - Reports & Defects

Thorough examination - any dangerous defects need to be notified to the employer forthwith by the competent person.

- a report in writing must be made as soon as is practicable (containing information specified in Schedule 1 of the Regulations) to the employer and any person from whom the equipment has been hired or leased.
- Where the defect involves an existing or imminent risk of serious personal injury, a copy of the report must be sent as soon as is practicable to the relevant enforcing authority. Where the equipment is hired or leased, this will be the HSE, otherwise it will be the enforcing authority for the premises.
- The employer must ensure that the lifting equipment is not used before the defect is remedied, or after a time specified in a report under Schedule 1 and before the defect is remedied.

Inspection - any dangerous defects need to be notified to the employer forthwith by the competent person

- as soon as practicable, the competent person must make a record of the inspection in writing.

Reg. 11 - Keeping of Information

Employers need to keep the EC declaration of conformity relating to lifting equipment (where received) for so long as the equipment is operated.



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Reports of thorough examination of lifting equipment (but not an accessory for lifting) must be kept until use of the equipment ceases.

Reports of thorough examination of an accessory for lifting should be kept for two years after the report has been made.

Other requirements relating to the keeping of records apply to where the safety of lifting equipment depends on installation conditions and where there is exposure to conditions causing deterioration.

The reports, or copies, should normally be stored at the premises where the lifting equipment is being used.

CHECKLIST

- | | |
|---|--------|
| 1. Do you carry out any lifting operations or have any lifting equipment subject to LOLER? | YES NO |
| 2. Do you ensure that the equipment is: | |
| - suitable | YES NO |
| - is of adequate strength and stability | YES NO |
| - if used for lifting persons meets specified safety criteria | YES NO |
| - safe as regards position and installation | YES NO |
| - suitably marked with the safe working load | YES NO |
| 3. Are lifting operations properly planned, appropriately supervised and carried out in a safe manner | YES NO |
| 4. Is your lifting equipment covered by a scheme of thorough examinations? | YES NO |
| 5. Where operators face a significant risk, is lifting equipment subject to suitable inspections? | YES NO |
| 6. Are reports/defects dealt with promptly and appropriately? | YES NO |
| 7. Do you keep relevant records for appropriate periods of time? | YES NO |



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REFERENCES/FURTHER DETAILS

1. Booklet L113 – “Safe Use of Lifting Equipment” - Lifting Operations and Lifting Equipment Regs 1998. Approved Code of Practice & Guidance (HSE).ISBN 0-7176-1628-2.
 2. Simple Guide to the Lifting Operations and Lifting Equipment Regulations 1998 HSE Books (INDG290)(06/99)(ISBN 0 7176 2430 7)
- www.hse.gov.uk/pubns/indg290.pdf
3. Leaflet PML 30 : Safe slinging of loads – “Plan your Slinging” - (HSE).
 4. Guidance Note GS39 - Training of crane drivers & slingers (HSE) ISBN 0-11-883932-2
 5. Guidance Note PM55 - Safe working with overhead travelling cranes (HSE)ISBN 0-11-883524-6.
 6. Video – “Plan your Slinging” available for purchase or hire from CFL Vision, PO Box 35, Wetherby, Yorkshire, LS25 7EX - Tel. (01937) 541010Fax. (01937) 541083
 7. Guidance Note PM7 - Lifts: thorough examination and testing (HSE)
 8. 'A thorough examination and testing of lifts: simple guidance for lift owners', INDG339 HSE Books
 9. Guidance Note PM26 - Safety at lift landings
 10. HELA LAC 50/2 - Emergency release of passengers from immobilised lifts.
 11. HELA LAC 50/8 - Power operated cellar hoists for beer containers.
 12. Guidance Note PM34 - Safety in the use of escalators (HSE).
 13. Guidance Note PM45 - Escalators: periodic thorough examination (HSE).
 14. Guidance Note PM28 - Working platforms on forklift trucks (HSE).
 15. British Standard BS 5323: Scissor Lifts.
 16. Fitting and use of restraining systems on lift trucks.