


HEALTH AND SAFETY MANAGEMENT SYSTEM GUIDANCE REGISTER		Guidance	G037
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Introduction

This document provides guidance in relation to how Aberystwyth University will comply with the requirements of the Lifting Operations and Lifting Equipment Regulations (LOLER) 1998. This guidance applies to staff, students, contractors, and visitors controlling lifting operations.

This document does not consider the requirements for manual handling operations. These Regulations require employers to ensure that lifting operations carried out as part of their daily operations are done so without risks to health and safety and that lifting equipment used in the workplace does not present risks.

Where lifting equipment is used on University premises and in areas under University control it must:


- be of sufficient strength, stable and suitable for the proposed use, as will any load being lifted or lowered and attachments used.
- be positioned, installed and operated to prevent the risk of injury.
- be marked accordingly where such equipment is used for lifting people and be safe for such a purpose.
- be thoroughly examined before lifting equipment is put into service for the first time
- be thoroughly examined at intervals in accordance with the requirements of the regulations by a competent person.

Definitions

What is Lifting Equipment?

Lifting equipment is any work equipment for lifting and lowering loads, and includes any accessories used in doing so (such as attachments to support, fix or anchor the equipment). This will include, but will not be limited to:

- Cranes
- lift trucks and telescopic handlers; high lift pallet trucks, both manual and powered, which have the ability to raise the forks above 300mm;
- goods lifts or passenger lifts,
- simple systems such as a rope and pulley used to raise a bucket of cement on a building site, a construction site hoist, a gin wheel, or a dumb waiter in a restaurant or hotel;
- pull-lifts; magnetic and vacuum lifting equipment;
- a vehicle inspection hoist;
- a scissor lift or a mobile elevating work platform (MEWP);
- ropes used for climbing or work positioning during arboriculture, climbing telecommunication towers and structural examination of a rock face or external structure of a building;
- automated storage and retrieval system;
- a front-end loader on a tractor used for raising and lowering loads such as a bale of hay;
- an excavator (or other earth-moving machinery) adapted to be used for lifting using lifting attachments (eg forks, grabs, lifting magnets), but not when used for normal earth-moving operations;
- a hoist or sling used for lifting people from, for example, a bed or a bath;

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- a loader crane fitted to a lorry, eg used to raise bins for delivery duties;
- a refuse vehicle loading arm, eg used to raise bins for tipping;
- a car transporter or vehicle recovery equipment;
- a skip collection vehicle; and
- vehicle tail lifts.

Lifting accessories (also known as lifting tackle) will include, but will not be limited to such items as:

- slings,
- removable eyebolts,
- chains,
- ropes,
- shackles,
- grabs,
- magnets,
- vacuum lifters,
- crane forks,
- lifting beams and spreaders


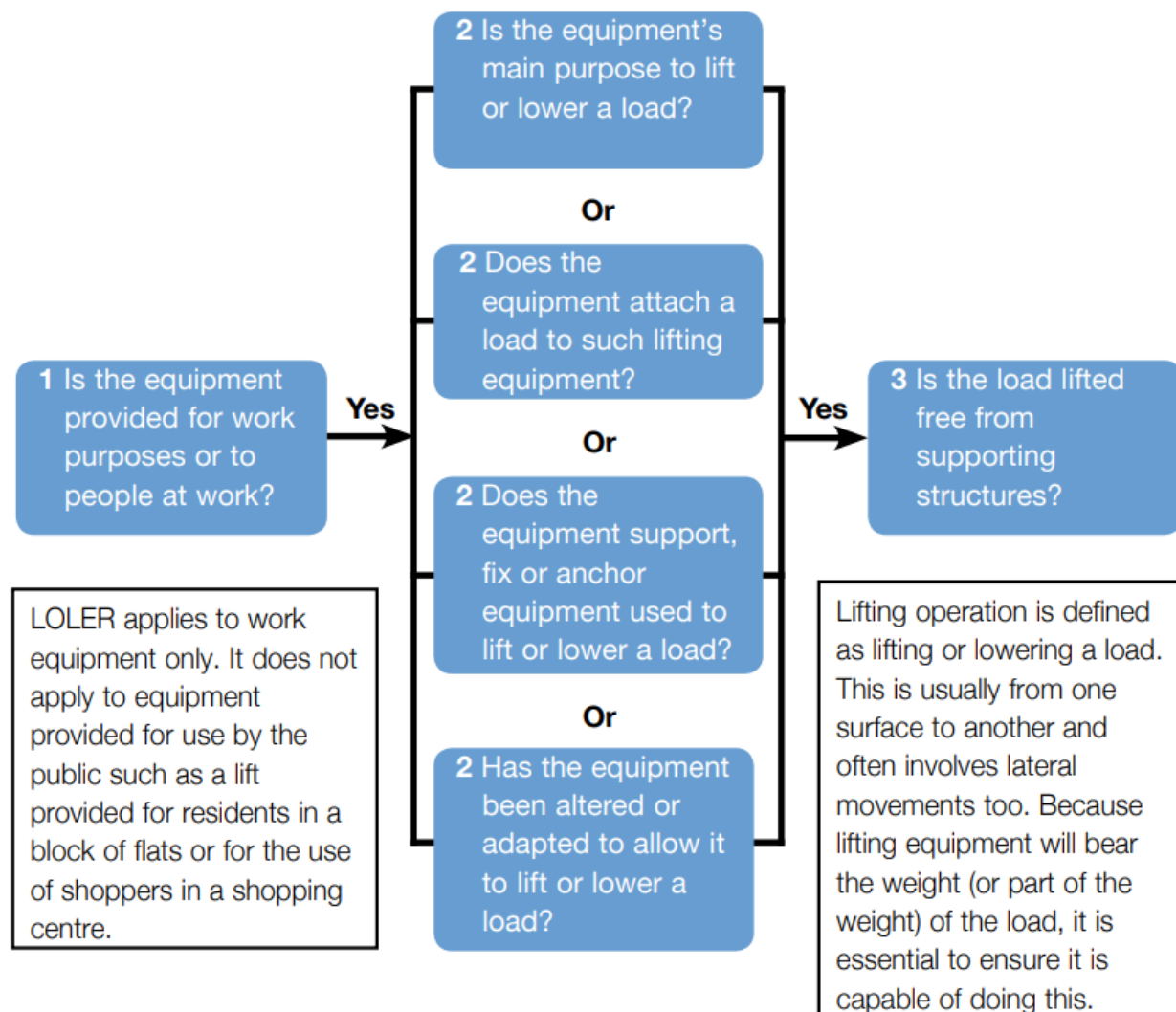
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Figure 1 Is my equipment subject to LOLER?



If you answer yes to question 1 and any of the options in column 2 and question 3, the equipment is likely to be subject to LOLER.


If you have answered no to question 1 you may still have duties under section 3 or 4 of the HSW Act to ensure the safety of users.

If you have answered no to all the options in column 2 and/or question 3, your equipment may still be subject to the need for inspection and maintenance under the Provisions and Use of Work Equipment Regulations 1998 (PUWER).

Responsibilities

Health, Safety and Environment Team

- The Health, Safety and Environment Team will monitor and regularly review this document. They will also be responsible for reporting incidents under RIDDOR.

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Faculties and Directorates (coordinated by Faculty Managers or Heads of Professional Service Departments)

- Must identify lifting equipment and lifting operations and liaise with the AU Compliance Manager maintenance
- Ensure locally 'owned' equipment is inspected and maintained on regular basis; with updated information entered on the Register.
- Will designate Competent Persons – i.e., Lifting supervisors.
- Risk assessments for all lifting works must be undertaken; Standard Operating Procedures (SOP) or Plan of lift maybe required, and supervisors assigned to designated tasks.
- Ensure users of equipment have appropriate training (where required)


Users: Staff, Students, Contractors and Visitors

Must ensure they comply with any risk assessment, training and SOP - as directed by the Lifting Supervisor (as appropriate)

- that all lifting operations are planned, supervised and carried out by a competent person or as a full contract lift in a safe manner.
- that all general activity based risk assessments consider risks arising from operations involving lifting equipment as appropriate and that they are assessed with suitable control measures implemented. Examples of Risk Assessments and a risk assessment template can be found here: <https://www.aber.ac.uk/en/hse/proc-prac/risk-assessment/>.
- that suitable information, instruction and training is given to users of lifting equipment and supervisors of lifting operations and they are competent to carry out those tasks.
- that specific equipment based training is provided to all lifting equipment users where necessary.
- that all necessary staff have attended the internal 'Lifting Operations and Lifting Equipment Awareness' training. Further details surrounding the course and how to register an interest can be found here: <https://www.aber.ac.uk/en/hse/training/>.
- the examination date for all lifting equipment is identified and arrangements made for a competent person to carry out inspections and that all lifting equipment is made available for inspection, i.e., easily accessible, etc, following the announcement of the inspection date, which you will be informed of by the AU Compliance Manager at least a week in advance.
- any remedial actions regarding any defects found during examinations are carried out.
- that any reports of defects etc. are acted upon appropriately with defective equipment immediately withdrawn from service and reported through the AU helpdesk service.
- that records of thorough examination of lifting equipment are maintained.
- All lifting equipment must be subject to a through visual examination and functional checks prior to lifting operations.
- Must inform the AU Compliance Manager if they intend on purchasing or hiring any equipment that would come under Lifting Operations and Lifting Equipment Regulations (LOLER) 1998.

The Director of Estates, Facilities and Residents:

- Is responsible for the provision and maintenance of passenger carrying lifts, and for fixed lifting equipment and appliances.

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- To be accountable for ensuring that the guidance is implemented effectively.
- To appoint a responsible person and delegate authority to ensure compliance.

AU Compliance Manager:

- Is responsible for arranging that all lifting equipment known to him/her, is thoroughly examined by a competent person throughout its life and the results recorded. The regulations require the thorough examination to be either within a fixed period (six months for lifting equipment for lifting persons and lifting accessories, twelve months for other lifting equipment) or in accordance with a written scheme of examination drawn up by a competent person.
- Is responsible for ensuring all items of lifting equipment are identified and recorded in an inventory on Planet (Maintenance Software used by the University).
- Is responsible for informing the competent person/organisation carrying out the thorough examinations of when defects found as part of the routine thorough examination have been rectified.
- Must inform a department representative at least one week in advance, of the intentions of a competent person to carry out a thorough examination of LOLER equipment within their building.
- Must ensure that records of thorough examinations of lifting equipment are kept for the lifetime of the equipment and for a minimum of two years after the examination.

Estates, Facilities and Residences:

- Are responsible for cranes, I beams, slings, and other items of lifting equipment provided for the building as a whole or to serve building systems, unless agreed otherwise, e.g., a construction site controlled by a Contractor and not Aberystwyth University. These will be tagged with a yellow tag which is used to track compliance with statutory inspection and examination requirements.

Building Occupiers:


- are responsible for maintenance of lifting equipment used in connection with their research and teaching, which may comprise, I beams over loading bays etc., and numerous small items of shackles and slings.
- Occupiers are also responsible for ensuring the competent person's examinations are carried out in accordance with the Lifting Operations and Lifting Equipment Regulations (LOLER), via the University insurance providers.

Contract lifting operations

Where an organisation enters a contract with a specialist contractor who will undertake the lifting operation on their behalf (i.e., the contractor plans the lift, provides the crane and the operator, crane supervisor, slingers and signallers), the contractor has the duty to ensure that the crane is properly maintained, thoroughly examined and safe to use and that the lifting operation is carried out safely

Effects of high wind

Where lifting equipment and/or its load may be affected by high wind, appropriate devices should be made available and used to detect dangerous situations and allow measures to be taken to cease using the equipment.

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Where appropriate, the maximum wind speed in which the lifting equipment can be used should be included in the instructions on use. Measures therefore should be in place to determine the wind speed and reduce its effect.

Wind effects can be relevant both indoors and outdoors. Equipment use and selection should take account of this.

Who is a Competent Person?

A person with the necessary knowledge, experience, training, skill and ability to perform the specific duty to which the requirement refers. For the purpose of thoroughly examining lifting equipment a competent person is a person having such practical and theoretical knowledge and experience of the equipment which is to be thoroughly examined that will enable him / her to detect defects or weaknesses. The person must be able to certify with confidence whether it is free from patent defects and suitable in every way for the duty for which the equipment is required. Formal examination should be carried out by the University's appointed Insurance Engineers, currently British Engineering Services.

The term 'competent person' required to carry out the planning (see relevant section below) means the person must have the skills, knowledge and experience to make the relevant assessment of the requirements of the lifting equipment being used and the type of task being carried out. It does not have the same meaning as, and is unlikely to be, the same competent person referred to in thorough examination and inspection above.

Safe Working Load

The maximum load as assessed by a competent person that an item of lifting equipment may raise, lower or suspend under the particular service conditions. The safe working load is marked on the equipment and appears in the statutory records.


Providing Equipment that is Safe and Suitable

As an employer the University has a duty to provide equipment that is safe and suitable for its intended purpose. New equipment should comply with the relevant European Directive and have an EC Declaration of Conformity and CE mark. Older equipment should comply with the general requirements of the Health and Safety at Work Act 1974 and any relevant current regulations and British Standards current at the time of supply. New equipment needs to be added to Planet (Maintenance Software used by the University) and any other relevant records. Equipment that has been removed from service or failed the inspection will also need to be deleted from Planet and any other relevant records.

Adequate Planning, Supervision and Undertaking of Lifting Operations in a Safe Manner

All lifting operations must be adequately planned. For routine operations a general plan will be sufficient, but for special or complex operations a specific written plan will be required.

Providing the right equipment, using appropriately trained people and following correct practices are a fundamental part of any plan. However, many other points of detail must be considered if the operation is to be conducted in a safe manner, for example, the weight, shape and strength of the load will need

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to be known, whether the load is to be turned in the air, whether the load will be stable when it is landed, whether the floor is strong enough to support the load. The effect of the lifting operation on other people or activities must also be considered, as must the weather if outdoor working is involved.

Training and Use


As an employer the University is obliged to ensure that equipment is properly used, and operatives are suitably trained in the use of lifting equipment and in lifting operations. Employees are equally obliged to only use equipment for which they have received training and to use it in the manner in which they have been trained. The training of any individuals involved in the use of lifting equipment should take into account:

- The specific uses for which items of lifting equipment are intended and where information relating to any appropriate operation manual can be found.
- The correct methods of using lifting equipment. Warnings should be given as to incorrect methods of use and dangerous practices, together with an explanation of the possible outcome.
- Recognition and understanding of the markings on the equipment, including any limitations this may impose on the user.
- The daily check procedure, including any requirements imposed by the manufacturer, supplier or competent person.
- Pre-use checks to be made, including load and angle estimation where applicable and the identification of basic equipment defects together with the procedure for reporting them and their immediate removal from service.
- The lifting operation exclusion zone and signage.
- The correct methods of attaching the load, slings and other accessories to the load hook of the appliance.
- Pre-lift checks to be carried out.
- Lifting and lowering procedures to be adopted. For complicated lifting operations written schemes of work, complete with diagrams, should be issued to operatives or be on permanent display in the vicinity of the lifting operation.
- The signals to be used when more than one operative is involved in the lifting operation. The possible faults which can occur in use, how to withdraw equipment from service and how to report defects.
- The procedures to follow on completion of the lifting operation including the correct methods of preparing portable items and accessories for transportation and storage.
- The correct methods of storage and the need to ensure these requirements are observed.
- The safe system of work to be followed and where advice can be sought if in doubt.

Selection of Suitable Lifting Equipment

Factor of safety

Good practice requires that any lifting equipment shall have an adequate factor of safety incorporated in each of the separate sections of the lifting arrangement. A minimum factor of safety for the specific item is recommended and this should not be decreased. The purposes of a factor of safety are

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numerous, including allowance for wear, impact, dynamic loading and accidental overloading. However, it cannot be emphasised enough that such allowances are a contingency only and must never be eroded. Care should always be taken to avoid circumstances which can overload the equipment and care should be taken in circumstances where inadvertent overload can occur. In extreme cases where several adverse circumstances occur at the same time, the result may be failure even though the nominal load lifted does not exceed the safe working load of the equipment. If such circumstances are likely to occur, reference should be made to a competent person who will advise whether it is necessary to use higher rated equipment to achieve a higher factor of safety.

Intended Use

Some items of lifting equipment (e.g., lifting beams) can be used in a variety of ways. It is therefore important that information on the specific intended use(s) be indicated by the manufacturer / supplier in such cases and the advice of a competent person sought before any change of use is authorised.

Compatibility

Several different grades of material are used for lifting equipment and it will be found that hooks, links, rings and shackles vary considerably in size for a given capacity according to the grade of materials used. Care must therefore be taken to ensure that each item of equipment seat correctly and aligns with its neighbours. Where necessary an intermediate link or shackle should be used to ensure this.

Marking, Storage and Handling

Marking

Equipment which has been satisfactorily verified e.g., proof tested and has passed the subsequent thorough examination should be marked with:


- Safe working Load
- An identification mark to facilitate periodic inspection and cross reference to other records
- Such other marks as are required by the standard being worked to and by legislation

Should any of these become obliterated or ineligible the equipment should be immediately withdrawn from use and referred to a competent person for re-verification and remarking.

Storage and Handling

In order to reduce to a minimum, the risk of damage or deterioration which may affect the safety of equipment, it is essential to provide suitable storage for equipment not in use and in many cases to prepare it for storage first.

The ideal storage requirements vary according to the nature of the equipment but in general the storage area should be dry and free from harmful pollution and not subject to extreme temperatures or sunlight. Equipment with exposed threads or machined bearing surfaces (e.g., eyebolts, shackles) should be protected and handled with care. Equipment which is returned to stores wet or has been subject to other substances liable to cause deterioration should be treated with special care.

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Bins, racks etc. should be provided and only the heavier, more robust items allowed to lie on the floor in a suitable storage area.

Inspections and Thorough Examinations

In Service Inspection

Lifting equipment can be subjected to operational and environmental conditions which may affect its safe working characteristics. LOLER requires that lifting equipment is properly maintained and safe to operate and use at all times. To ensure that this is the case the regulations require lifting equipment to be inspected at suitable intervals between thorough examinations. Regular in-service inspections should be programmed at appropriate intervals to satisfy this legal requirement.

The period between the in-service inspections should be determined by the utilisation, environment and similar factors, based on the history of the equipment e.g., visual check each time equipment is used.

The in-service inspection should be carried out by a responsible and competent person with knowledge of the requirements.

Inspection and Thorough Examination

LOLER requires that all lifting equipment is thoroughly examined by a competent person throughout its life and the results recorded. The regulations require the thorough examination to be either within a fixed period (six months for lifting equipment for lifting persons and lifting accessories, twelve months for other lifting equipment) or in accordance with a written scheme of examination drawn up by a competent person. It is also a legal requirement that lifting equipment is thoroughly examined by a competent person following any exceptional circumstances e.g., unexpected shock loading which is liable to jeopardise the safety of the equipment. The regulations also require the competent person to state on the report the date by which the next examination is to be made.


All records of test, examination, inspection and maintenance should be retained and cross-referenced for inspection by the competent person or the Regulator, when requested.

Maintenance

There is a legal requirement to maintain all equipment provided for use at work and this is of particular importance for lifting equipment. This duty can be satisfied by the introduction of regular maintenance programmes, the details of which should be recorded. Maintenance should be carried out in accordance with the manufacturers' instructions, supplemented as necessary to take into account the operating conditions.


Where equipment is dismantled and re-assembled, or repairs are made, the equipment should be re-verified by a competent person before further use.

Safe Use of Lifting Equipment

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The objective of good lifting practice is to ensure that any load is safe when lifted and is as secure in the air as it is on the ground. The following is a general procedure which can be adapted by Aberystwyth University Faculties and Professional Service Departments to any lifting operations irrespective of the type of lifting appliance or method of attaching the load to the appliance. Also, it can be used for developing/assisting in risk assessments for lifting and lifting schemes. All lifting operations must be undertaken by suitably trained and competent personnel.

- Determine the weight of the load and the position of its centre of gravity in relation to the lifting points. In all lifting operations, care should be taken to ensure that the load imposed on any item does not exceed its safe working load. Where there is any uncertainty about the weight of the load or the load applied to a particular part of the equipment, it is recommended that load sensing devices be used.
- Decide on the method of lifting and slinging of the load. The equipment selected should be used only for the specific purpose for which it was designed and should not be adapted for any other purpose without the approval of a competent person. The equipment and its method of intended use should be suitable for the load and the method of attachment of slings to the load and slings to the lifting appliance should be secure. None of the lifting equipment should be overloaded either by the weight of the load or the method of slinging.
- The method of slinging must ensure that the load is balanced, does not violently or unintentionally change when lifted and at all stages of the lift remains in a stable condition. In general, the load will swing and may be unstable if at any time the centre of gravity of the load is not vertically beneath the crane hook, or the centre of gravity of the load is higher than the point of attachment of the slings to the load.
- Care must be taken to ensure that the lifting equipment does not damage the load and equally the load does not damage the lifting equipment. Depending upon the slinging method chosen, packing may be required between the sling and the load.
- All lifting equipment should be carefully inspected for obvious defects before each use.
- Ropes or tag lines may be required to control the load once it is in the air. This is particularly recommended in the case of long loads where tag lines should be attached at one or both ends so that rotational movement can be controlled. The tag lines should be of such length that persons controlling the load do not stand under it during the lift. Under no circumstances must tag lines be used to balance the load, or for any other purpose than controlling rotation of the load.
- Consideration should be given to any obstacles which may have to be avoided such as cables, overhead lines, pipes or structures.
- Before commencing the operation, a suitable landing site should be prepared. The site chosen must be level and of adequate size and capable of taking the weight of the load. The operatives should be wary of any cellars, suspended floors, underground services which could affect the load bearing capacity of the landing site. In addition, it may be necessary to provide suitable landing pads e.g., timber bearers to enable the slings to be removed from under the load.
- Ensure that the load is free to be lifted and not restrained by fixing bolts etc. Seals or joints, which may offer considerable resistance, should be separated by other means before the lift commences.

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- Ensure that any loose parts of the load are adequately secured, either by the slinging method or by other means, or they are removed.
- Ensure that there is a clear method of communication between the operative responsible for slinging and the operator of the lifting appliance. Hand signals are preferred particularly where noise might interfere.
- Under no circumstances should anyone be in close proximity to, be under or touch a load being lifted and exclusions zones should be established to ensure people are kept clear and this requirement maintained during lifting operations.
- With ALL lifting operations the load should be lifted a nominal distance only in the first instance. This trial lift allows the operative to check his estimation of balance, stability and general security of the load, whilst in a relatively safe position. If any discrepancies are found the load should be lowered and the slinging revised. The sequence of trial lift and adjustment should be repeated until the operative is satisfied that the load is balanced, stable and secure.
- When lowering the load, it should be brought to a halt a short distance above the landing site to allow it to be steadied, its position and the position of any landing pads checked and to ensure all personnel are clear of the danger area. The load should be inched down into position. Before slackening off the slings, checks should be made to ensure that the load is safe and stable. If not, it should be lifted slightly to allow the landing blocks etc. to be adjusted and lowered again. The load should not be lowered so as to trap the slings as this may result in serious damage to them.
- Operatives should always be careful not to set the load down on their own or anyone else's toes and although they must not touch the load, they must ensure that their hands and fingers are clear so that they do not become trapped. Unfortunately, these are both common accidents whilst carrying out this activity. Having set down the load carefully and its stability confirmed, the sling legs should be manually withdrawn by the operatives.
- When the operations has been completed all lifting equipment must be returned to storage.
- If to be used again the slings should be hooked back onto the upper terminal fitting to prevent them inadvertently becoming hooked onto surrounding objects or striking someone.

Further Information and References

S.I. 1998:2307 Lifting Operations and Lifting Equipment Regulations 1998

Safe Use of Lifting Equipment. Lifting Operations and Lifting Equipment Regulations 1998

Approved Code of Practice L113, HSE Books, 1998. ISBN 978 0 7176 6586 0


Safe Use of Work Equipment. Provision and Use of Work Equipment Regulations 1998

Approved Code of Practice L22 (4th addition), HSE Books, 1998. ISBN 978 0 7176 6619 5

BS7121-1:2016 Code of Practice for the Safe use of Cranes

Managing for health and safety (HSG65) 2013, HSE Books, 2013. ISBN 978 0 7176 64566

Code of Practice for the Safe Use of Lifting Equipment Edition 8 (Revised 2015) – Lifting

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Equipment Engineers Association

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