UNIVERSITY OF BATH HEALTH AND SAFETY STANDARD

Lifting Equipment and Lifting Operations

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Author and Lead	Document X:\Professional Services\HR\UHSE\Subjects\Lifting Equipment\Standard and Guidance\2022-02-07-Lifting Equipment Standard.docx and and Paul Maggs; Health and Safety Adviser				
Aims	The University is committed to ensuring the health, safety, and welfare of all staff, students, and visitors. Lifting equipment and lifting operations often involve the movement of heavy equipment and loads. There is a risk of injury if lifting operations are not planned and performed properly. The University aims to fulfil its duties by ensuring: 1) That suitable lifting equipment is provided in the first instance. 2) That lifting equipment and lifting operations are subject to risk assessment. 3) That lifting equipment is subject to appropriate inspection and maintenance. 4) That lifting equipment users are trained in the use of that equipment; and 5) That lifting equipment is subject to a thorough examination at an appropriate frequency.				
Scope	This standard does not apply to passenger and goods lifts installed to permanently serve a building or constructions. There are additional statutory requirements that apply to lifts - the Lifts Regulations 1997 - which are not covered by this standard. This standard will not apply to work equipment which does not have as its principal function the lifting or lowering of loads of the type associated with “traditional” lifting equipment such as cranes, fork-lift trucks or accessories such as chains or eyebolts. (For example, a horizontal conveyor belt or a winch pulling a load along the ground are not lifting equipment). Other than the exceptions noted above, this standard applies to all lifting equipment supplied by the University of Bath for use at work Some lifting operations may involve significant manual effort to power the lifting equipment. Where manual handling is involved, then the Manual Handling Operations Standard should be consulted - https://www.bath.ac.uk/publications/manual-handling-safety-standard/				
Relevant Legislation	Legal requirements • Health and Safety at Work etc Act 1974 (HASWA) • Provision and Use of Work Equipment Regulations 1998 (PUWER) • Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) • Management of Health and Safety at Work Regulations 1999 (MHSWR) • Supply of Machinery (Safety) Regulations 2008 The Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) are supported by the Safe use of lifting equipment Lifting Operations and Lifting Equipment Regulations 1998 Approved Code of Practice and guidance (L113) - available on the HSE website http://www.hse.gov.uk/pubns/books/l113.htm The safe use of cranes, including the performance of through examinations is supported by BS7121 Code of practice for safe use of cranes.				

Definitions	Work equipment, lifting equipment and lifting operations “Work equipment” means any machinery, appliance, apparatus, tool, or installation for use at work (whether exclusively or not). “Lifting equipment is a subset of “work equipment”. “Lifting equipment” means work equipment for lifting or lowering loads and includes any attachments used for anchoring, fixing, or supporting the lift.. “Lifting operation” means an operation concerned with the lifting or lowering of a load.
	Declaration of conformity and essential health and safety requirements To harmonise standards, the EU has issued directives for essential health and safety requirements with which lifting equipment must comply. A “Declaration of conformity” is a documented claim issued by the manufacture or supplier that the lifting equipment is compliant with the essential requirements. The requirement for a “Declaration of conformity” is not retrospective, but does apply to all new equipment.
	Safe working load (SWL) A ‘safe working load” (SWL) is 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. The SWL is usually expressed in terms of the maximum load that the equipment may safely lift (for cranes and lifting attachments), or the capacity of the equipment (for fork-lift trucks).
	Examination scheme and thorough examination Lifting equipment must be subject to a thorough examination by a competent person at appropriate intervals. The “examination scheme” means a suitable scheme drawn up by a competent person. A “thorough examination” means a thorough examination by a competent person and, where it is appropriate, such testing by a competent person as is appropriate.
	Installation Installation is not defined but is considered to apply to lifting equipment erected or built on site, such as gantry cranes, i.e., lifting equipment which is intended to be there for a period of time and is normally fixed in position.
Responsibility for implementation	Director of Campus Infrastructure Heads of Department and
Training availability:	Departments must consult suppliers and manufacturers information. Trade organisations can be used to identify suitable instruction and training resources (e.g., for slinging).

	Standard to meet:	**Accountability**	**Reference documents and more information**
1	Identifying lifting equipment Departments must be able to identify what is and what is not lifting equipment.	Head of Department	Definitions contained within this standard. Further information in the Lifting Operations and Lifting Equipment Regulations guidance
2	Risk assessment Departments which manage or use lifting equipment must produce and record a risk assessment for the management and operation of that equipment.	Head of Department	Guidance can be found in the Lifting Operations and Lifting Equipment Regulations guidance

3	Providing suitable equipment Departments must provide suitable lifting equipment in the first instance. The provision of suitable lifting equipment (include purchases of new equipment and providing equipment from stocks held) must be informed by a risk assessment.	Head of Department	
4	Before purchasing an item of lifting equipment, Departments must make sure that the equipment is the subject of a "Declaration of Conformity" and is CE marked.	Head of Department	
5	Making sure lifting equipment remains suitable Departments must ensure that lifting equipment remains suitable for use. This must include suitable pre-use checks, periodic inspection, and such maintenance as is appropriate. This process should be informed by risk assessment. If preventative maintenance is essential to maintain lifting equipment in a safe condition, then a maintenance log must be kept. If inspections are essential to maintain lifting equipment in a safe condition, then an inspection log must be kept.	Head of Department	Guidance can be found in the Lifting Operations and Lifting Equipment Regulations guidance The suppliers or manufactures instructions should give details of appropriate maintenance and inspection.
6	Training users Departments must ensure that persons who use lifting equipment are competent to do so and that they receive appropriate information, instruction, and training.	Head of Department	
7	Planning lifting operation Departments must ensure that individual lifting operations are planned and supervised by a competent person.	Head of Department Equipment operators	Guidance can be found in the Lifting Operations and Lifting Equipment Regulations guidance
8	Through examination – schedule of equipment Campus Infrastructure will collate an organisation wide schedule of lifting equipment which requires a thorough examination. The details held in the schedule will be such that items listed in the schedule can be clearly identified Campus Infrastructure will make annual checks with Departments to ensure that the schedule is current. Departments will check the schedule against the equipment that they hold and report additions, deletions, and amendments to the schedule. Departments must report additions and deletions to the schedule that occur between checks.	Director of Campus Infrastructure Head of Department	Guidance can be found in the Lifting Operations and Lifting Equipment Regulations guidance Guidance can be found in BS7121 Code of practice for safe use of cranes.
9	Through examination – performing the examination Insurance Services have implemented a contract to provide statutory *Thorough Testing and Examinations* of Lifting	Director of Campus Infrastructure	Checks on lifting equipment are currently performed by British Engineering Services (BES). BES have a database of the

	Equipment. This contract is administered by the Department of Campus Infrastructure. Departments are responsible for informing Estates when any Lifting equipment is acquired, moved, replaced, or disposed of so that the database can be maintained and kept up to date. The service provider will contact named contacts in departments to arrange access to equipment for testing and inspection. Departments must ensure that the competent person has access to the lifting equipment that it is responsible for. The competent person appointed to perform the thorough examinations will devise a suitable schedule of checks and, if appropriate, testing for items of lifting equipment.	Head of Department Competent person	equipment to be examined and past examination results. Findings are reported electronically. Contact Estates for further information or to arrange electronic access to reports.
10	Through examination – reporting the results The competent person appointed to perform the thorough examinations will report the results of the thorough examination to the named departmental contact. If the thorough examination shows an item of lifting equipment to be in a dangerous state, then the competent person will make an instant report to the named contact. The named contact will be responsible for ensuring that the item in question is withdrawn from service.	Competent person Director of Campus Infrastructure Head of Department	
11	Raising or lowering of people The raising and lowering of people by work equipment which is not specifically designed for the purpose must not be undertaken. Although the LOLER ACoP allows this in exceptional circumstances and as a rare and extraordinary activity, the University does not possess the equipment required to do this safely.	Head of Department	
12	Equipment marking Lifting equipment must be clearly marked with the Safe working load (with markings for each configuration if appropriate) and its suitability or not for the use of lifting persons. Lifting equipment accessories must be marked with safe working load and other characteristics necessary for safe operation.	Head of Department	Guidance can be found in the Lifting Operations and Lifting Equipment Regulations guidance

Risk Assessment Record

Risk Assessment of: Lifting equipment and lifting operations at work	**Assessor(s):**	**Date:**
Overview of activity / location / equipment / conditions being assessed: Lifting equipment and lifting operations at work for selection and use of lifting equipment. Generic risk assessment excludes passenger and goods lifts (to which additional legal requirements apply) – see Health and Safety Standards for Lifting Equipment and Lifting operations for definitions and further guidance.	File reference X:\Professional Services\HR\UHSE\Subjects\Lifting Equipment\Standard & Guidance\2022-02-07-Lifting Equipment Standard.docx	
Generic or specific assessment? Generic risk assessment	Context of assessment: Desktop assessment – can be adopted or adapted by Department for local use	

#	Hazard(s) identified	Persons affected	Existing controls and measures	A	B	A x B	Additional controls required
	Special Cases						
	Raising or lowering of people in a lift	Person being raised or lowered	• This assessment does not apply to passenger and goods lifts installed to permanently serve a building or constructions. There are additional statutory requirements that apply to lifts - the Lifts Regulations 1997 - which are not covered by this assessment..				
	Provide suitable equipment						

	Lifting equipment that is unsuitable may fail during use or prove difficult to operate safely – general factors that need to be considered that are likely to apply to all lifting equipment		Departments must ensure that the lifting equipment they provide is suitable for the intend use. The higher the risks, the greater the effort that is needed to identify and control them. Some items of lifting equipment will need minimal attention, whilst others will require much more.
			
			• Before first providing lifting working equipment for use, consider
			  ○ how often the lifting equipment will be used.
			  ○ where the lifting equipment will be used.				

#	Hazard(s) identified	Persons affected	Existing controls and measures	A	B	A x B	Additional controls required
			○ the nature and characteristics of the load that the lifting equipment will lift. ○ any limitations on use specified by the manufacturer or supplier; and ○ the competence of the operators to use the equipment.				
	Lifting equipment that is unsuitable may fail during use or prove difficult to operate safely – specific factors that need to be considered that may apply depending on the lifting equipment and the circumstances of use		• Risk assessments should consider safe access and egress for equipment users. • Risk assessments should consider the risk of slips, trips and falls. • Risk assessments should consider the effect of weather upon the use of the lifting equipment if the equipment is to operate outside or in otherwise exposed locations. • Risk assessments should consider the safe working load of any lifting equipment attachments. • Risk assessments should consider the stability and safe working load of lifting equipment. Risk assessments should consider the effects of stabilising arrangements, such as crane or platform outriggers, spreader plates, etc. ○ If the appropriate stabilising arrangements are not in place, then the lifting equipment must not be used • Risk assessments should consider the risk of overturning or overloading. Where this risk is significant, the lifting equipment must be fitted with suitable warning devices or limiters.				
	Lifting equipment that is unsuitable may fail during use or prove difficult to operate safely - purchasing new lifting equipment		• Ensure equipment is subject to a Declaration of Conformity before purchase and is supplied with a Declaration of Conformity and a CE mark. • Ensure equipment is supplied with suitable technical information, including limits on its use and maintenance information. 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. In such a case no further thorough examination is required. However, if equipment has to be “installed” then a thorough examination may be necessary. Used equipment which is supplied with a current report of thorough examination does not require a further thorough examination before first use at the new				

#	Hazard(s) identified	Persons affected	Existing controls and measures	A	B	A x B	Additional controls required
			premises. However, if equipment has to be “installed” then a thorough examination may be necessary. If you import the equipment from outside the EU, then the burden of making a “Declaration of Conformity” and CE marking falls upon you. New equipment without a declaration and CE marking should not be used.				
	Lifting equipment that is unsuitable may fail during use or prove difficult to operate safely - hiring of lifting equipment		• Ensure equipment is supplied with a Declaration of Conformity and is CE marked. • Ensure equipment is supplied with suitable technical information, including limits on its use and maintenance information. • Ensure equipment is supplied with the results of the last thorough examination. (Equipment used to move persons need to be examined at least every 6 months, other equipment at least every 12 months) • Ensure equipment inspection and maintenance schedule is up to date. • Ensure equipment is subject to pre-use checks before starting lifting operations.				
	Maintain equipment in a suitable state						

	Lifting accessories may deteriorate with time due to poor storage and fail during use.		• Ensure that lifting accessories are suitably stored away after use so that they are not damaged. This requires the provision of suitable storage.
			• Ensure that lifting accessories are stored in a suitable environment to prevent rusting, rotting or deterioration. The particular environment will depend on the type of lifting accessory such as:
			  ○ need for a dry atmosphere to prevent rusting.
			  ○ separation from chemicals that could have a corrosive effect on them.
			  ○ artificial fibre lifting slings out of direct sunlight and away from heat sources; and
			  ○ protection from attack by rodents.
			
			The manufacturer or supplier of the accessory should be able to provide further information.				

	Lifting accessories may deteriorate with time due to wear and tear and fail during use.		• Ensure pre-use checks are carried out. • Ensure an appropriate inspection programme is in place.				

#	Hazard(s) identified	Persons affected	Existing controls and measures	A	B	A x B	Additional controls required
			Example of defects which should be identified in common items of lifting accessories include: • textile slings - damaged, cut, abraded or stretched. • chains - deformed or stretched links, cracks; and • wire ropes - broken wires, kinks.				
	Lifting equipment may deteriorate with time due to accidental damage or wear and tear		• Ensure pre-use checks are carried out. • Ensure an appropriate inspection programme is in place. Defects which are commonly noted as being potentially hazardous include cracks and permanent deformation, corrosion of vital parts, excessive wear, or failure of moving parts (e.g., interlocks) and significant misalignment.				
	Planning lifting operations						
	A lifting operation may fail due to poor planning		• Lifting operations should be planned and performed by competent operators. Basic operation to be followed: (a) assess the weight of the load. (b) choose the right accessory for lifting, e.g., depending upon the nature and weight of the load and the environment in which it is to be used. (c) check the anticipated path of the load to make sure that it is not obstructed. (d) prepare a suitable place to set down the load. (e) fit the sling to the load (using an appropriate method of slinging). (f) make the lift (a trial lift may be necessary to confirm the centre of gravity of the load; tag lines may be necessary to stop the load swinging). (g) release the slings and (h) clear up. For routine lifting operations an initial plan may only be required once but you may need to review it occasionally to make sure that nothing has changed and the " plan" remains valid. For complex lifting operations you may need to plan the task each time it is carried out.				

#	Hazard(s) identified	Persons affected	Existing controls and measures	A	B	A x B	Additional controls required
	A lifting operation may result in someone being struck by the load		• Where practicable, loads should not be carried or suspended over areas occupied by persons. Where this is not practicable you should establish a safe system of work which minimises the risks to persons who may need to be below the load. • Where it is necessary to leave loads suspended you should ensure that access to the danger zone is prevented, ensuring that the load has been secured properly.				
	A lifting operation may result in the load or lifting equipment striking a person, other equipment, or the building fabric because the operator does not have line of sight		• If the operator of lifting equipment cannot observe the full path of the load, either directly or by means of auxiliary devices, the employer should ensure that a responsible person has appropriate means of communication to guide the operator. • Where hand signals are used, 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 for use in agricultural operations or BS 7121 Code of practice for safe use of cranes				

	A lifting operation may fail due to proximity hazards around the lifting operation		• You need measures in place which address the risks arising from proximity hazards.
			  ○ coming into contact with overhead power lines.
			  ○ coming into contact with other work equipment or structures.
			  ○ trench work and excavations.
			  ○ other lifting operations in the vicinity.
			  ○ warehouse racking; and
			  ○ underground services such as drains or sewers.
			
			The best way to avoid a collision between lifting equipment or their loads and surrounding objects is to position or install the lifting equipment so that the operating area is clear of obstructions.				

	A lifting operation may fail due to location it is being used		• Risk assessments should consider factors which may affect stability, such as: • the strength of the ground or surface on which the lifting equipment is positioned or located. • stability of the surface under load conditions.				

#	Hazard(s) identified	Persons affected	Existing controls and measures	A	B	A x B	Additional controls required
			• whether the surface on which the lifting equipment operates is on a slope and the angle of any slope. • the size and nature of the load (e.g., whether the load itself is unstable). • how the load is intended to be lifted. • the maximum wind loading that may occur.				
	Through examination						

	All lifting equipment and lifting accessories deteriorate in use and may fail as a result		The thorough examination is in addition to pre-use checks and periodic inspections.
			
			• Should be thoroughly examined by a competent person so that deterioration can be detected in sufficient time to allow remedial action to be taken.
			  ○ Deterioration can occur more quickly in certain conditions such as wet, abrasive, or corrosive environments and this equipment may need to be thoroughly examined more frequently.
			  ○ The competent person will determine the level of thorough examination required based on an assessment of the risks.
			• The MINIMUM frequency of the thorough examination is:
			  ○ 6 months for equipment used to lift persons
			  ○ 12 months for all other lifting equipment
			
			• The Campus Infrastructure will maintain a schedule of lifting equipment which requires a thorough examination, but Departments must cooperate to help maintain this.
			  ○ Campus Infrastructure will make periodic checks of the schedule with Departments.
			  ○ Departments will respond to periodic checks to confirm the schedule is up to date and report additions or deletions.
			  ○ Departments will report additions and deletions to the schedule between checks.				