Health and Safety

Lifting Equipment and Lifting Accessories

Minimum Standard

Version	**V1.0**
Author/s	Lee McGurty
Approver	ELT Operating Committee
Effective Date	26/09/2022
Review Date	26/09/2025

1 Aims and Principles

The aim of this Government of Jersey (GoJ) Minimum Standard is to provide guidance on the steps which should be taken to ensure that the risks posed by lifting equipment and lifting accessories are adequately controlled to prevent harm.

The document is split into two parts for ease of reference:

Part 1 – Lifting Equipment
Part 2 – Lifting Accessories

Lifting equipment used for lifting people is not covered by this Minimum Standard.

The use of forklift trucks is covered separately in the Minimum Standard – Fork Lift Trucks.

Departments responsible for managing these risks must develop their own procedures which detail the specific arrangements to be implemented. The procedures must include the standards set out in this document or be of an equivalent or higher standard.

2 Legislation and Guidance

a) Applicable Legislation and Approved Code of Practice

Health and Safety at Work (Jersey) Law, 1989

Cranes and Lifting Appliances (Jersey) Regulations, 1978

Chains, Ropes and Lifting Gear (Jersey) Regulations, 1980

b) Guidance

Guidance on the Cranes and Lifting Appliances Regulations

Guidance on the Chains, Ropes and Lifting Gear Regulations

Safe Use of Lifting Equipment (UK HSE)

3 Definitions

Lifting Appliances

An excavator, mechanical grab, mechanical shovel, piling machine of any description, pulley or

pulley block, a winch which is designed to be used by itself, and any other prescribed appliance (Ref: Cranes and Lifting Appliances (Jersey) Regulations, 1978).

Lifting Equipment

Includes all lifting appliances as defined above, and any other items of powered equipment which are used to lift a load (excluding persons).

Crane

Includes overhead travelling cranes, mobile jib and lorry mounted cranes.

Lifting Operations

Any activity which involves the use of lifting equipment to raise, lower or support a load.

Lifting Accessories

Lifting accessories are items used to attach the load to lifting equipment, providing a link between the two.

Examples include:

- Fibre or rope slings
- Chains (single or multiple leg)
- Hooks
- Eyebolts
- Spreader beams
- Vacuum devices

Competent Person

A person who has appropriate practical and theoretical knowledge and experience of the lifting equipment or lifting accessories to be thoroughly examined to enable them to detect defects or weaknesses and assess their importance in relation to the safety and continued use of the items being examined.

4 Who this Minimum Standard Applies to

- All Government of Jersey (GoJ) and States' employees
- Voluntary staff or those on honorary contracts where there is no implied contract of employment

5 Links to other GoJ Policies, Minimum Standards and Guidance

a) Policies

Government of Jersey - Health and Safety Policy

b) GoJ Minimum Standards

Fork Lift Trucks
Risk Assessment
Control of Contractors

6 Roles and Responsibilities

The department's arrangements must clearly set out the roles and responsibilities of those required to manage the risks to employees and others from lifting operations involving the use of lifting equipment and where required, lifting accessories.

Reference should be made to the Government of Jersey Health and Safety Policy for general responsibilities.

Part 1 – Lifting Equipment

7 Construction of Equipment

All lifting equipment must be designed and be fit for the purpose for which it is intended to be used.

Lifting equipment should only be used in accordance with the manufacturer's/supplier's instruction.

8 Marking of Lifting Equipment and Safe Working Load

All lifting equipment should be uniquely marked to enable items to be easily identifiable for checking purposes.

The safe working load (SWL) should also be marked on all lifting equipment. Where this can vary due to the nature of the lifting equipment, this information should be readily available to the operator.

9 Safety Devices

Where there is a significant risk of overturning and/or overloading arising during the use of any lifting equipment, devices such as rated capacity indicators and rated capacity limiters, which provide audible and/or visual warning when the safe lifting limits are being approached, should be provided.

10 Thorough Examination and Testing

All lifting equipment should be tested and thoroughly examined by a competent person as required.

A crane should be tested:

- Prior to being taken into use
- After any alteration or repair which could affect its strength or stability

A crane should be thoroughly examined:

- Prior to being taken into use
- After any alteration or repair which could affect its strength or stability
- At least once in every 12-month period.

It should be noted that at every fourth thorough examination, the competent person must state whether, in their opinion, it is necessary for the crane to be retested and thoroughly examined following such testing. They must also specify the period within which this should be carried out.

Any automatic safe load indicator (ASLI) fitted to a crane shall be tested and thoroughly examined by a competent person:

- At least once in every 6-month period.

Any automatic safe load indicator (ASLI) fitted to a crane must be tested by a competent person:

- After the crane to which it is fitted has been wholly or partly dismantled
- After any erection, alteration, or removal of the crane which is likely to have affected the proper operation of the indicator.

A report of the thorough examinations and any testing of cranes and ASLIs must be prepared by the competent person and be provided to the department.

These reports should be retained for the period set out in the retention schedules set out in the Government of Jersey - Health and Safety Policy.

11 Stability

Cranes and lifting appliances must only be used when in a stable position. If necessary, steps must be taken to ensure their stability e.g. levelling the ground, using outriggers etc.

Cranes and lifting appliances must not be used in any weather which could affect its stability.

Mobile cranes must be fitted with level indicators which must be in a fixed position and be clearly visible to the crane driver.

12 Pre-Use Checks

All operators of lifting equipment should carry out pre-use checks prior to using it. Depending on the type of equipment being used and the risks associated with its use, a record of these checks should be kept.

Details of recommended pre-use checks will be available from the manufacturer e.g. operation manual.

13 Maintenance

All lifting equipment should be subject to routine maintenance. Planned preventative maintenance should be carried out in accordance with the manufacturer's recommendations.

This should be documented and records of maintenance should be kept.

14 Training of Operators

Any persons operating lifting equipment must have received suitable training. Depending on the type of equipment, the risks associated with it and industry standards, this can be in-house. However, some items of lifting equipment such as lorry loaders (HIAB), excavators etc. require the operator to hold a formal certificate of training.

15 Certificate of Competence

A certificate of competence must be produced for every operator of a crane, excavator, mechanical grab or mechanical shovel. The certificate must be issued by the employer of the operator or owner of the equipment.

The following should be considered before certificating an individual:

- Be at least 18 years of age
- Be medically fit with particular emphasis on eyesight, hearing and reflexes
- Fully understands the duties of a slinger and/or banksman and be familiar with the signalling methods, including the recognised code of manual signals
- Have a good judgement of distances, heights and clearances
- Possess sufficient working knowledge of the equipment so that they will be capable of carrying out routine checks, recognise faults etc., and be able to interpret the manufacturer's instructions

- Have the stature and physique, if necessary, to enable them to operate the equipment safely

A form containing the prescribed particulars can be accessed at Certificate of Competency of Operator (CLA 6)

16 Slinger/Signaller

Any persons required to sling loads and provide signals to the operator of the lifting equipment should undertake appropriate training for the role which will usually be provided by an external organisation.

A signaller (banksman) must always be used where the load or hook is not clearly visible to the operator.

17 Secureness of Loads

Steps must be taken to ensure that all loads are properly secured. Measures must also be taken to prevent all or part of the load from being displaced.

18 Planning Lifting Operations

All lifting operations should be properly planned. The degree of planning and complexity of the lifting plan will vary and should be proportionate to the foreseeable risks involved in the work.

The plan for any lifting operation must address the foreseeable risks involved in the work and identify the appropriate resources (including people) necessary for safe completion of the job.

Factors to be considered may include the following:

- Competence of persons involved
- Safe means of access/egress for the operator
- Operator welfare
- Suitability of the lifting equipment
- Suitability of the ground conditions to ensure stability
- Positioning of the equipment and visibility
- ~~Working~~ Persons present under suspended loads
- Visibility
- Attaching / detaching and securing loads
- Environment including weather conditions
- Location
- Overturning
- Proximity hazards e.g. obstructions, overhead services etc.
- Derating

- Overload
- Pre-use checks

The plan should clearly set out the actions involved at each step of the operation and identify the responsibilities of those involved.

A generic plan can be prepared for routine operations although this should be kept under review to ensure it remains relevant.

Lifting plans must be prepared by competent persons.

Further information is available from the UK HSE planning and organising lifts.

Part 2 – Lifting Accessories

19 Construction

All lifting accessories must be:

- Of good construction
- Be made from sound material
- Be of adequate strength
- Be free from obvious or visible defects

When purchasing lifting accessories, checks should be made that they have been constructed to recognised standards such as British Standards.

Further information is available in Appendix I of the Guidance on the Chains, Ropes and Lifting Gear Regulations.

20 Initial Testing and Examination

Lifting accessories should be tested and examined:

- Prior to being taken into use. An accredited certificate of test and examination from the manufacturer will be acceptable when the item is initially purchased.

- After any alteration or repair which could affect its strength or stability. A report of the thorough examination and any testing should be prepared by the competent person and be provided to the department.

21 Periodic Examinations

All lifting accessories (except rope slings) must be examined by a competent person every 6 months.

Rope slings must be examined by a competent person every 3 months.

A competent person must provide a report containing the particulars set out in Appendix II of the Guidance on the Chains, Ropes and Lifting Gear Regulations.

22 Marking of Lifting Gear and Safe Working Load

All lifting accessories should be uniquely marked to enable items to be readily identified for checking purposes.

The safe working load (SWL) should also be marked on all lifting accessories by either stamping the item itself or in the form of a permanently attached label. Care should be taken to ensure that the information remains legible.

23 Safety Requirements for Hooks

Every hook used for raising, lowering or suspending a load, must be provided with a device to prevent the displacement of the sling or load, or shaped or constructed in a way to prevent, so far as practicable, the risk of displacement of anything attached to the hook.

24 Marking of Lifting Beams and Lifting Frames

Any lifting beam or lifting frame must have its own weight clearly marked on it.

Any lifting accessories, including beams and frames, used between lifting equipment and the load will need to be taken into account when determining the overall weight of the load to ensure the lifting equipment is not overloaded.

25 Safe Use, Care and Maintenance

Lifting accessories such as chains and slings can be vulnerable to damage if they are not stored or handled correctly.

Damage to lifting accessories can cause a reduction in their lifting capacity which can lead to failure.

Appendix A contains information on the steps which should be taken to protect chains and different sling types to reduce the risk of damage occurring.

26 Pre-use Checks

Prior to using any lifting accessory to lift or support a load, the user should carry out a visual examination to check for any obvious defects.

Where any defects are identified, the lifting accessory must be taken out of use and depending on the degree of damage, should either be examined by a competent person to determine whether it is fit for continued use or should be disposed of.

27 Formal Visual Inspections

If lifting accessories are being used or stored in an environment where they may be more prone to damage, or pre-use checks are regularly identifying defects, a system for carrying out in-house formal visual inspections should be implemented.

These should be carried out at regular intervals e.g. monthly and the results recorded.

These checks can be carried out by a person who has the necessary knowledge to recognise typical defects and the action which should be taken in response.

Appendix A

Safe Use, Care and Maintenance of Chains

The main causes of deterioration which occur in chain slings and chain are loss of metal due to wear, abrasion, corrosion and overloading, resulting in permanent stretch or physical damage.

The effect of a particular level of deterioration or damage often depends on the grade of chain being inspected and this can be checked from the identification marks and records which must be available.

The various grades of steel chain slings should be marked on every twentieth link or at 3 ft (920mm) intervals, whichever is the lesser distance. This quality grade mark should also be stamped on the top and bottom terminal fittings.

Any chain or fitting that has permanently stretched 5% or more due to overloading, or has been bent or distorted in any way, should be withdrawn from service immediately.

The following measures should always be taken into consideration when chain lifting gear is used:

1. Never overload a chain.
2. Never use a chain in which the links are locked, stretched or are without free movement.
3. Never hammer a chain to straighten a link or to force a link into position.
4. Never use an excessively pitted, corroded or worn chain.
5. Special precautions should be taken and a stronger chain or sling used:
    - When the exact loading is in doubt.
    - When there is liability to shock.
    - When the conditions are abnormal or severe.
    - When there is exceptional hazard to life and limb.
6. The following precautions should always be strictly observed:
    - Do not cross, twist, kink or knot any chain.
    - Do not drag a chain from under a load.
    - Do not drop a chain from a height.
    - Do not roll loads over a chain, or let running loads pass over chains lying on the ground.
    - Do not use a chain around sharp corners without protective padding.
    - Do not form a loop by inserting the point of a hook into a link.
7. Special care should be taken to avoid snatching i.e. sudden loading in cold weather.
8. Careful periodic inspection reduces hazard and increases safety.

9. Chain life is increased by lubrication.
10. Chains should be stored in dry and sheltered places.
11. Chains should always be repaired by a fully qualified repairer capable of providing the necessary heat treatment, proof resting and inspection.
12. Always ensure the safe working load is clearly marked.
13. Chain slings should only be used for the purpose for which they have been designed.
14. Remember, a chain is only as strong as its weakest link.

Appendix A

Safe Use, Care and Maintenance of Wire Ropes and Slings

1. Storage

Until required, steel wire ropes and slings should be stored in a clean, dry place, preferably under cover, free from damp and rain and away from boilers or escaping steam. Ropes, except when on reels, should be raised from the ground on planks, and coils should be coated with protective grease and covered with sacking. Periodical inspection and renewal of anti-corrosive grease is desirable.

2. Handling and Uncoiling

Steel wire ropes are usually supplied in coils or on reels. Correct handling and uncoiling particularly of Langs' lay rope, is of the utmost importance if damage by kinking and untwisting is to be avoided.

3. Kinks

Possibly the most common form of damage to a wire rope or sling due to improper handling, is the formation of a kink. A kink starts with the formation of a loop and although it can be formed in a rope in service, it is usually encountered during the handling of a rope prior to being used.

A loop which has not been drawn tightly enough can easily be removed by turning the rope in the correct direction to restore the lay. If the loop is pulled up tightly, the rope is irreparably damaged; a severe distortion results, and at the particular spot the individual wires will never assume their correct position.

Normal service can never be depended upon after a rope has been kinked. Abrasion and fatigue usually develop rapidly, and owing to distortion, undetected damage can sometimes lead to dangerous situations.

Appendix A

4. Lubrication

Correct lubrication of wire ropes is essential if the ropes are to give satisfactory service. Good lubrication not only prolongs the life of the rope but helps to reduce friction, corrosion, and preserves the internal parts.

All ropes are lubricated internally and nearly all externally during manufacture but care should be taken to see that an approved neutral lubrication is externally applied at frequent intervals during use, and whilst not in use, if it is practicable to do so.

If the rope is exposed to the elements a thicker lubricant is recommended. Before the application of lubricants the rope should be clean and dry. Advice should always be sought from the manufacturer as to the most suitable cleaning solvent and lubricant.

5. Wear and Routine Inspection

The strength of a wire rope or sling is continually being reduced during service owing to the action of abrasion, bending, corrosion and other factors. Any noticeable reduction in the diameter of the rope, excessive abrasion, or broken wires indicates a serious deterioration in the rope and should be inspected by a competent person without delay.

Appendix A

Safe Use, Care and Maintenance of Natural Fibre Ropes and Slings

1. Storage

Wet or damp rope should never be left lying around as this will tend to start the rope rotting at the interior. Wet rope should always be allowed to dry naturally as too much heat will cause the fibres to become brittle very quickly. When not in use fibre ropes and slings should be ‘flacked down’ in a dry well ventilated storage area, or hung on wooden or galvanised pegs. Some ropes or slings can be treated with a water repellent or rot proofed by the manufacturer.

2. Use and Signs of Damage

When lifting loads with sharp edges the corners should always be suitably packed to prevent unnecessary damage.

Where a rope is reeved through a block, the groove should be of an adequate diameter of not less than six times the rope diameter, and no rope should be reeved through a block where the width of the groove is less than the diameter of the rope. Always ensure the grooves of the block are smooth and provide an efficient seating for the rope.

A reduction in the diameter of the rope indicates that the rope has been strained and should be destroyed or used for a non-lifting purpose.

The individual fibres of a rope should appear healthy and strong. However, if they are powdery, discoloured or can be pulled out of the rope, rot (mildew) has occurred and the rope should be withdrawn from service.

Particular care should be taken to ensure rope is not used where there is a possibility of it coming into contact with any chemicals. Chemical action on a rope can, in some cases, be difficult to detect so if there is a risk of contamination, man-made fibre rope may be more suitable.

Appendix A

Natural fibre rope and rope slings are easily damaged and care must be taken to ensure they are not abused. The Regulations require a thorough examination every three months, nevertheless, constant checks should be made to ensure there is no obvious damage to the rope that may affect its safe use.

Appendix A

Safe Use, Care and Maintenance of Man-Made Fibre Belt Slings

Many of the principles previously mentioned in this guide concerning the safe use of lifting gear also apply to the use of nylon and other synthetic belt slings. However, special attention should be paid to the following: -

1. It is illegal to use a damaged sling.
2. It is advisable to inspect the sling before each lift.
3. Protect the sling from any sharp edges on the load.
4. Never, under any circumstances, attempt to repair a damaged sling.
5. Always avoid placing the splice or sewed join over the hook.
6. Avoid angles in excess of 120˚ between the legs of the sling.
7. Do not cross or twist slings under loading.
8. Never pull a sling out from underneath a load while the full weight is resting on it.
9. Loads should not rest directly on the sling; dunnage or chocks should be used.
10. Do not drag slings over rough surfaces.
11. Avoid any snatch or shock loading.
12. Always check the safe working load of the sling before making the lift.
13. Contact with alkalis and acids should be avoided.
14. Belt slings should only be used in the manner and conditions for which they have been designed.

Appendix A

Disposable Flat Belt Lifting Slings

Some cargoes arrive in the Island complete with a flat belt sling attached to the load.

These slings fall into two main categories, those woven from man-made fibres such as polyproperlene, polythene or similar material, or the Span Set Unisling type consisting of plastic covered nylon strands. These slings can be in the form of a single belt or a number of belts fabricated into a pattern, either of which may have soft eyes or metal fittings.

Disposable flat belt slings are specifically designed for the convenient handling of a single certified load and usually marked with a Safe Working Load (S.W.L.) of 1050 or 2000 kilogrammes (K.G.).

Once removed from its original load the sling **must not** be used for lifting purposes unless the following measures are taken to ensure compliance with the Chains, Ropes and Lifting Gear (Jersey) Regulations, 1980.

1. Every sling must be thoroughly examined by a competent person before being used for the first time and a report made.

2. Each sling must be clearly marked with a Safe Working Load (S.W.L.) not exceeding 840 lbs (71/2 cwt) or 380 kilogrammes (K.G.) and a distinguishing number or mark.

3. The sling must be thoroughly examined by a competent person at least once every three months.

4. The recommendations for the safe use of nylon belt slings (man-made fibre belt slings) should be followed when using the disposable type of sling.