

LIFTING AND RIGGING EQUIPMENT – MAINTENANCE GUIDELINE

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1 Purpose

The purpose of this Guideline is to define the minimum requirements for the inspection, maintenance and registration of Lifting and Rigging Equipment and provide guidance on Load Restraint Equipment used on any Mid West Ports Authority (**MWPA**) controlled land or activity.

This Guideline is to be read in conjunction with the document Lifting, Rigging and Load Restraint Equipment – Selection and Use Guideline.

2 Scope

This Guideline covers the inspection, maintenance and registration of:

- Lifting and Rigging Equipment – Including all fixed and portable equipment used in lifting task including but not limited to cranes, vehicle loading crane, chain blocks, winches, lever blocks, mechanical hoists, lifting slings, chains, wire ropes, pulleys, hardware or any other equipment used to support a load.
- Load Restraint Equipment – Including all equipment used for load restraint, whether used for trucks, utilities, forklifts, or any other method used to restrain a load while being lifted, transported, or moved.

3 Roles and Responsibilities

Role	Responsibility
Supervisors	<p>Supervisors are responsible for ensuring that:</p> <ul style="list-style-type: none"> • all lifting and rigging equipment is registered, and that the register is kept up to date; • workers who use lifting and/or load restraint equipment are trained in the correct use of the equipment; • responsible team members conduct regular inspections of lifting and rigging equipment; • damaged or faulty equipment is repaired / destroyed / replaced as required; and • compliance with procedures and auditing the system annually.

Role	Responsibility
Maintenance Supervisors	<p>Maintenance Supervisors are responsible for:</p> <ul style="list-style-type: none"> • maintaining a register of all lifting and load restraint equipment; • inspecting, labelling and registering all new major lifting and load restraint equipment items; and • arranging annual inspections of all lifting and load restraint equipment and recording results.
Employees	<p>Employees are responsible for:</p> <ul style="list-style-type: none"> • inspecting lifting and load restraint equipment prior to, and on completion of each use; • ensuring any damaged or defective lifting or load restraint equipment is immediately tagged with an 'Out of Service' tag, taken out of service, placed in a suitably marked area, for checking and repair or destruction; and • reporting any damaged or defective lifting or load restraint equipment to the Supervisor.

4 Definitions

Competent Person	<p>A person who is appointed or designated by MWPA to perform specified duties, which the person is qualified to perform by demonstrated knowledge, training and experience. For the purposes of rigging and lifting equipment inspection, the minimum external qualification is a High Risk Work Licence – Basic rigging.</p> <p>For the purposes of crane inspections, a competent person is a person who has acquired through training, qualification or experience the knowledge and skills to carry out a major inspection of the plant; and is eligible for professional engineer membership of Engineers Australia or is determined by the regulator to be a competent person (<i>Work Health and Safety (General) Regulations 2022, r.235</i>).</p>
Crane	<p>As per the <i>Work Health and Safety (General) Regulations 2022, r.5</i>:</p> <p>(a) means an appliance intended for raising or lowering a load and moving it horizontally; and</p> <p>(b) includes the supporting structure of the crane and its foundations; but it does not include any of the following:</p> <p>(i) an industrial lift truck; (ii) earthmoving machinery; (iii) an amusement device; (iv) a tractor; (v) an industrial robot; (vi) a conveyor; (vii) building maintenance equipment; (viii) a suspended scaffold; or (ix) a lift.</p>
High Risk Work Licence	<p>A licence required for certain high risk work activities as stipulated in <i>Work Health and Safety (General) Regulations 2022, Schedule 3 – High risk work licences and classes of high risk work</i>.</p>
Mobile Crane	<p>Means a crane capable of travelling over a supporting surface without the need for fixed runways and relying only on gravity for stability.</p> <p>As per the <i>Work Health and Safety (General) Regulations 2022, r.5</i>:</p>
Major Inspection	<p>A major inspection of mobile and tower cranes must be completed (and documented) by a Competent Person at least every 10 years (<i>Work Health and Safety (General) Regulations 2022, r.235</i>).</p>
Lifting and Rigging Equipment	<p>All equipment used to lift and lower loads and includes all rigging and equipment used in lifting tasks, including but not limited to cranes, vehicle loading crane, chain blocks, winches, lever blocks, mechanical hoists, lifting slings, chains, wire ropes, pulleys, hardware or any other equipment used to support a load.</p>
Load Restraint Equipment	<p>All equipment used for restraining (holding) loads safely in place while it is being lifted, transported, and/or moved. This includes straps, webbing tensioners, ratchet handles, rated rope, chains, chain tensioners, load binders, hooks, latches, and nets.</p> <p>Load Restraint Equipment is not designed or approved for overhead lifting.</p>
Manufacturer's Rated Capacity (MRC)	<p>This is also known as Maximum Rated Capacity. This should be used for all cranes, hoists and winches and reflects a change in terminology to the applicable standard (AS1418.1 Cranes, Hoists and Winches) that no longer refers to SWL. The MRC must be clearly labelled on both sides of the crane or boom.</p>
Minimum Breaking Load (MBL)	<p>The maximum force under straight pull, a piece of lifting equipment, lifting device or accessory, can be exposed to until it breaks.</p>
MWPA	<p>Mid West Ports Authority</p>

Safe Work Load (SWL)	The mass or force that a piece of lifting equipment, lifting device or accessory can safely use to lift, suspend, or lower a mass without fear of breaking. This definition is still in use but being replaced by WLL in most circumstances.
Work Load Limit (WLL)	This is the maximum working load designed by the manufacturer and represents a mass or force that is much less than that required to make the lifting equipment fail or yield. WLL is calculated by dividing the Minimum Breaking Load (MBL) by a Safety Factor (SF), normally ranging from a minimum of 4-6 for general rigging equipment up to a factor of eight for fibre ropes used for work at height. Work Load Limit should be used for all lifting devices suspended below the crane hook.
Vehicle Loading Crane	As per the <i>Work Health and Safety (General) Regulations 2022, r.5:</i> Means a crane mounted on a vehicle for the purpose of loading and unloading the vehicle.
Work Box	As per the <i>Work Health and Safety (General) Regulations 2022, r.5:</i> Means personnel carrying a device, designed to be suspended from a crane, to provide a working area for a person elevated by and working from the device.

5 Overview

A register of all Lifting and Rigging Equipment and Load Restraint Equipment items shall be maintained by MWPA Maintenance and Asset Software – (IFS). Note that a number of key items have regular inspection regimes identified in the IFS system.

5.1 SELECTION / PROCUREMENT

All lifting and load restraint equipment shall comply with relevant Codes of Practice, Australian Standards and MWPA Purchasing standards.

5.2 INSPECTION REQUIREMENTS

Requirements regarding the inspection and maintenance of Lifting, Rigging and Load Restraint Equipment shall be conducted as per Attachment A.

Guidance on inspection criteria is listed in Attachment B.

5.3 IDENTIFICATION

Where the number has been allocated to an individual Lifting Equipment or Load Restraint Equipment item, the number shall be securely and durably affixed to the item. This may be, in the case of a metallic lifting device, a metal engraved tag or an identification plate affixed to the device. In the case of a Fibre Sling, the required information must be identifiable on a material identification tag supplied with the Sling or added as an engraved tag.

Note: Load Restraint Equipment will generally not be individually identified with engraved tags.

MWPA has adopted AS 3012-1990 Tagging Colour Standard for inspections of lifting equipment.

	Red	December-February
	Green	March-May
	Blue	June-August
	Yellow	September-November

5.4 EQUIPMENT REGISTRATION / ALTERATION / MODIFICATION

The registration of equipment other than cranes (refer to Section 9 for detail on crane registration) includes but is not limited to the following applicable items.

- Work boxes
- Boom Type Mobile Elevated Work Platforms
- Prefabricated Scaffolding

6 Defective Equipment

If a piece of Lifting Equipment or Load Restraint Equipment is deemed by a Competent Person to be defective, an 'Out of Service' tag shall be attached to it, placed in a suitably marked area, for checking and repair or destruction and shall not be used, and the Supervisor shall be informed.

Defective equipment shall be rendered unusable and discarded and the register of Lifting Equipment adjusted accordingly.

7 Storage

All lifting and load restraint equipment and accessories must be correctly stored in a clean, dedicated area.

All items of equipment should be stored off the ground, and slings stored on frame, categorised by WLL.

Chains and wire rope slings should be lightly oiled.

Accessories should be stored off the ground on a peg board or similar.

8 Cranes

8.1 CRANE REGISTRATION AND MODIFICATION

Most MWPA and third party cranes must be registered before they can be used in the workplace. Cranes that are registrable plant must be design registered before they are supplied and used and include the following.

- Mobile cranes with a rated capacity of greater than 10 tonnes.
- Tower cranes.
- Gantry cranes with a safe working load greater than 5 tonnes or bridge cranes with a safe working load of greater than 10 tonnes.

Modifications to cranes may only be authorised by a suitable experienced and qualified engineer and the design must be re-registered with local State or Territory regulator.

8.2 CRANE – GENERAL MAINTENANCE AND INSPECTIONS

Regular inspection and maintenance activities are to be carried out in accordance with the manufacturer's instructions by a competent person. They take the form of routine inspections (3 monthly) annual inspections (12 monthly) and major inspections (10 yearly) all of which are documented.

8.2.1 Quarterly Routine Inspections

Routine Inspections can take place 3 monthly and shall include but are not limited to the following.

- Crane functions and the controls for speed, smoothness of operation and limits of motion.
- Load indicators – Test lift using a certified test weight.
- Emergency devices – Indicating devices / safety switches / interlocks/ Limit devices.
- General items – Lubrication / filters / fluid levels / wheels / tyres / signage and markings.
- Specific items nominated in the crane manufacturer's instructions.
- Inspection (visual, objective measurement) of structural components and critical parts including brakes, gears, fasteners, pins, shafts, wire ropes, sheaves, locking devices and electrical contractors.

8.2.2 Annual Inspections

Annual Inspections can take place **12 monthly** and shall include but are not limited to the following.

- An annual inspection should include every item specified by the crane manufacturer for annual inspection and every item included in the routine inspection and maintenance programs.
- A detailed check of the functioning and calibration of limiting and indicating devices.
- Detailed inspection of structural and wear components including assessment of tolerances for wear limits / evidence of corrosion / critical areas for evidence of cracking.

8.2.3 Major Inspections

A Major Inspection shall take place **10 yearly** and shall include but not limited to the following.

- A major inspection must be completed for registered mobile and tower cranes. Non-registrable mobile cranes and bridge and gantry cranes should have a 'major' inspection completed so that they continue to be safe to operate.
- Major inspections involve a thorough examination of all critical components of the crane and normally requires dismantling and inspection / measurement of the components by a Competent Person.
- Major inspections must be carried out at the end of the crane's design life, as determined by the manufacturer's instructions, or as determined by a competent person to meet the same minimum requirements established by relevant technical standards.
- If it is not reasonably practicable to inspect a crane according to the above, a major inspection shall be conducted on the crane at least every 10 years from the date the crane was first commissioned or registered, whichever was first.
- Completion of a major inspection does not indicate that the components inspected will have a further 10 year life and future inspections shall be scheduled accordingly.

- Major inspections must be carried out by, or under the supervision of, a Competent Person who has acquired through training, qualifications or experience the knowledge and skills to carry out a major inspection of the plant and is registered under a law that provides for the registration of professional engineers or is determined by the regulator to be a competent person.

8.3 CRANE POST INCIDENT INSPECTIONS

If a crane has been subject to an incident and/or possibly damaged the following applies.

- If there is a risk to personnel, assets or environment then the crane should be immediately made safe and taken out of service to prevent further operation.
- If the crane needs to be operating during assessment, inspection, maintenance or cleaning, risk control measures shall be documented prior to this occurring.

8.4 CRANE ALTERATIONS / MODIFICATIONS

Any alterations or modifications to the design of cranes that may affect health and safety must be registered with the regulator (WorkSafe), unless the registration already occurs with a corresponding regulator (State or Federal).

9 Attachments

Document	Title
Attachment A	Inspection and Maintenance Requirements
Attachment B	Inspection Criteria

10 Associated Documents

Document Title
Lifting and Load Restraint Equipment Register
Lifting and Rigging Equipment – Selection and Use Guideline

Location – Mid West Ports Intranet – [Document Centre](#)

11 References

Standard	Title
Australian Standards	AS 1353 – Flat Synthetic Webbing Slings
	AS 1380 – Fibre Rope Slings
	AS 1418.2 – Cranes – Serial Hoists and Winches
	AS 1418.17 – Cranes, design and construction of workboxes
	AS 2317 – Collared Eyebolts
	AS 1666 – Wire Rope Slings – Product Specification, Care and Use
	AS 2321 – Short Link Chain for Lifting Purposes
	AS 2550 – Cranes – Safe Use
	AS 2741 – Shackles
	AS 2759 – Steel Wire Rope – Use, Operation and Maintenance
	AS 3775 – Chain Slings – Grade T
	AS 3777 – Shank Hooks and Large Eye Hooks – Maximum 60 tonnes
	AS 4344 – Motor vehicles – Cargo Restraint Systems – Transport Chain and Components
	AS 4380 – Motor vehicles – Cargo Restraint Systems – Transport Webbing and Components
	AS 4497 – Roundslings – Synthetic Fibre – Product Specification, Care and Use

Location – SAI Global – <https://www.saiglobal.com/online/>

Act or Regulation
<i>Work Health and Safety Act 2020</i>
<i>Work Health and Safety Regulations 2022</i>

Location - Western Australian - <https://www.legislation.wa.gov.au> | Australian - <https://www.legislation.gov.au>

Authority	Resource
National Transport Commission	Load Restraint Guide 2018
National Transport Commission	Load Restraint Guide Light Vehicles 2018

Location - <https://www.ntc.gov.au/codes-and-guidelines/load-restraint-guide>

12 Monitoring, Evaluation and Review

This document is required to be reviewed every two years from the last scheduled review date.

Minor updates made within this two year period, will not be taken as a *full review*.

The Document Custodian is responsible for conducting the review in accordance with **Controlled Documents Review and Approval Process Work Instruction**.

13 Administration

Document Custodian: Maintenance Superintendent
Document Approver: Maintenance Services Manager
Approval Date: 7 July 2025
Document Review Period: 2 yrs

Attachment A – Inspection and Maintenance Requirements

Item	Visual Inspection	Certified Inspection*	External Registration	Register**	Individually identified
Mobile Cranes (Rated capacity greater than 10 tonnes)	Prior to each use	3 monthly 12 monthly Major inspection at least every 10 years <small>(r.235 WHS regulations 2022)</small>	External registration with regulator (Worksafe)	Asset Register	Yes
Vehicle Loading Cranes	Prior to each use	3 monthly	Not required	Asset Register	Yes
Chain Blocks	Prior to each use	3 monthly	Not required	Rigging Register	Yes
Winches	Prior to each use	3 monthly	Not required	Rigging Register	Yes
Lever Blocks	Prior to each use	3 monthly	Not required	Rigging Register	Yes
Mechanical Hoists	Prior to each use	3 monthly	Not required	Rigging Register	Yes
Lifting Slings – Soft	Prior to each use	3 monthly	Not required	Rigging Register	Yes
Lifting Chains	Prior to each use	3 monthly	Not required	Rigging Register	Yes
Lifting Beams	Prior to each use	3 monthly	Not required	Lifting Beam Register	Yes
Wire Ropes – Lifting	Prior to each use	3 monthly	Not required	Rigging Register	Yes
Wire ropes – Shiploaders	Prior to each use	3 monthly	Not required	Asset Register	Yes
Pulleys and Sheeves	Prior to each use	3 monthly	Not required	Rigging Register	No
Concrete Lifting Clutches	Prior to each use	3 monthly	Not required	Rigging Register	Yes
Padeyes and Fixed Lifting Points including installed Eyebolts	Prior to each use	3 monthly Proof load test annually	Not required	Rigging Register	Yes
Gas Bottle Lifting Frames	Prior to each use	3 monthly	Not required	Rigging Register	Yes
Rigging Hardware – Shackles	Prior to each use	3 monthly	Not required	Rigging Register	No
Forklift Jibs	Prior to each use	3 monthly	Not required	Rigging Register	Yes
Pallet Bars	Prior to each use	3 monthly	Not required	Rigging Register	Yes

Item	Visual Inspection	Certified Inspection*	External Registration	Register**	Individually identified
Height Safety – Harness, Lanyards, Lifelines, Fall Arrest, Height Rescue Equipment	Prior to each use Refer to Working at height	3 monthly (normally by a third party specialist)	Not required	Rigging Register	Yes
Mobile Elevated Work Platforms (MEWP) includes Boom, Telescopic and Scissor Type	Procedure for more detail	Major inspection at least every 10 years	Scissor Lift MEWP no longer require registration	Asset Register	Yes
Personnel Cages / Work Box		3 monthly Proof load test certificate provided when new.	Design is registered with regulator Worksafe	Asset Register	Yes
Specialist Equipment – Gangways and Brows Assorted lengths (Currently 2.5m to 23m)	Prior to each use	4 monthly Proof load test at least 5 yearly (IMO).	Not required	Asset Register	Yes
Specialist Equipment – ShoreTension / Mooring	Refer to specific Shore Tension documents for Inspection, Maintenance and Registration requirements: <ul style="list-style-type: none"> • Operations and Maintenance Manual. • ShoreTension – In use Register (includes Manufacturer recommended inspection regimes for various components such as 4 yearly load testing on ropes). 				
Load Restraint Equipment	Prior to each use	Not required	Not Required	Asset Register	No

Attachment B – Inspection Criteria

The criteria listed below is to provide guidance to suitable Competent Persons to inspect various types of rigging and lifting equipment. It is not an exhaustive list.

Item	Inspection Criteria
Mobile Cranes (Rated capacity greater than 10 tonnes)	3, 12 monthly and 10 yearly inspections are conducted by external third party specialists.
Wire Ropes and Slings	<ul style="list-style-type: none"> • Wire ropes and slings shall be inspected for cleanliness (ingress of dirt, mud, metal fibres) before and after use. • Wire ropes and slings shall be discarded if any of the following defects are observed following evaluation by a competent person. <ul style="list-style-type: none"> • Working Load Limit marking visible (where possible). • There are signs of stretching. • The number of broken wires is more than 10% of the total, in one rope lay or in a length equivalent to eight rope diameters. • The rope is distorted due to kinking, crushing or core collapse. • Signs of detrimental corrosion are evident. • There is damage or distortion immediately adjacent to the termination. • There is damage to the ferrule on a ferrule-secured eye-terminated sling. • The thimbles are loose or deformed.
Chains and Chain Slings	<ul style="list-style-type: none"> • Chains and chain slings are to be checked for damage and cleanliness before and after each use. • Chain slings shall be checked to ensure they are clearly marked with the WLL, and that safety latches on hooks are fully operable and hammer locks on chain assemblies are secure. • Chain slings shall not be used if the chain or links are: <ul style="list-style-type: none"> • worn or corroded (maximum wear 10%); or • deformed, chipped, nicked or cracked, or have damaged master links, couplings and attachments.
Webbing / Round / Fibre Slings	<ul style="list-style-type: none"> • Webbing, round and fibre slings shall be inspected for damage, cleanliness (ingress of dirt, mud, metal fibres) before and after use. • Take the following precautions when inspecting webbing, round and fibre slings. <ul style="list-style-type: none"> • Visually inspect slings and all attachments for defects. Look for broken fibres, wear, cuts, heat affected, stretched, distortion, or chemical damage. • Quarantine damaged or defective slings or slings that do not have a manufacturer's tag with identification number and/or WLL.

Item	Inspection Criteria
Lever / Chain Blocks	<ul style="list-style-type: none"> • Lever / Chain Blocks are to be checked for damage and cleanliness before and after each use. • Disassembly of the unit to perform internal visual inspection should be performed based on the frequency of use. • Visually inspect all parts for defects. Look for: <ul style="list-style-type: none"> • broken items and excessive wear – especially ratchet teeth and tip of the pawl; • gouges, twists, cracks or distortions in the chain and/or body of the unit; • loose or missing bolts, nuts and pins; • worn or glazed brake components; and • hooks / latches that are visually bent, worn or whose openings are enlarged beyond normal throat opening should be quarantined. • Load chains should be free of dirt / foreign material and properly lubricated. • Quarantine damaged or defective items that do not have manufacturer’s identification information including WLL.
Padeyes / Eye bolts	<ul style="list-style-type: none"> • Visually inspect all parts for defects. Look for: <ul style="list-style-type: none"> • excessive damage, wear, or deformation; • eyebolts should have no debris or contamination of the thread or underside of collar; and • both eyebolts and padeyes should have the size / rated capacity clearly identified.
Forklift Jibs	<ul style="list-style-type: none"> • Visually inspect all parts for defects. Look for: <ul style="list-style-type: none"> • excessive damage, wear, or deformation; • hooks / latches that are visually bent, worn or whose openings are enlarged beyond normal throat opening should be quarantined; • ensure the front of the jib where the forklift tyres slide onto are not excessively worn or damaged; and • quarantine damaged or defective items that do not have manufacturer’s identification information including WLL.
Frames / Baskets	<ul style="list-style-type: none"> • Visually inspect all parts for defects. Look for: <ul style="list-style-type: none"> • significant damage or wear, and that the WLL tag or markings are fitted and legible; • gouges, twists, cracks or distortions with a focus on welded / joined component areas; and • quarantine damaged or defective items that do not have manufacturer’s identification information including WLL.