


STANDARD OPERATING INSTRUCTION	OH&S-GVW-313
Inspection and Maintenance of Lifting Equipment	

1.0 Purpose and Scope

To detail the requirements for the inspection and maintenance of lifting equipment to protect the health and safety of employees who may use such equipment. This procedure applies to all GVW workplaces.

2.0 References

- OH&S (Plant) Regulations 1995.
- AS 1380.2 Fibre Rope Slings, Part 2: Care and use.
- AS 3775 Chain slings – grade T, Part 2: Care and use.
- AS 1666.2 Wire rope slings, Part 2: Care and use.
- AS 1438.2 Wire coil flat slings, Part 2: Care and use.
- AS 1352.2 Flat synthetic-webbing slings, Part 2: Care and use.
- AS 1891.4 Industrial fall-arrest systems and devices. Part: 4 Selection, use and maintenance

3.0 Definitions

- OH&S Occupational Health and Safety
- AS Australian Standard

4.0 Responsibilities and Authorities

OH&S Coordinator

- In consultation with Operations staff review procedure every 2 years.

District Manager

- Ensure appropriate training is provided to staff carrying out inspections of lifting equipment.
- Ensure resources are provided for any necessary replacement of lifting equipment.
- Ensure resources are provided to carry out inspection of lifting equipment

Work Coordinator

- Ensure inspections are carried out in accord with the relevant frequency requirement contained in this procedure.
- Ensure inspection records are completed and appropriately stored.
- Ensure only suitably trained persons carry out inspections.
- Arrange for the repair or replacement of damaged or faulty items.

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Employees

- Ensure lifting equipment is visually inspected before each use.
- Ensure a pre-entry / re-entry inspection is carried out of all fall arrest belts and harnesses, confined space entry tripods and retrieval systems as per Australian Standard AS 1891.4.
- Ensure lifting equipment that is found to be damaged or faulty is removed is tagged out with a “Do Not Operate” tag and removed from service.

5.0 OHS Hazards and Controls

5.1 HAZARDS:

Plant and Equipment Hazards:	Striking, crushing from collapsing loads, falling due to faulty or damaged lifting equipment
Hazardous Materials Hazards:	Spill, exposure to hazardous substance from collapsing loads
Dangerous Goods Hazards:	As above
Environmental Hazards:	As above
Atmospheric Hazards:	As above

5.2 CONTROLS TO CONSIDER:

Nil

6.0 Other Resources Required

Nil

7.0 Procedure

7.1 Types of Lifting Equipment

Periodic visual inspections shall be carried out for the following types of lifting equipment in accord with this procedure and/or the manufacturer’s specification:

- Lifting Chains and Chain Slings
- Webbing Slings
- Flexible Steel Wire Rope (FSWR)
- Fall Arrest Belts and Harnesses
- Confined Space Entry Tripods
- Confined Space Entry Retrieval Systems (for example: Rolgliss or Winches)
- Fibre Ropes (including Tag Lines and Life Lines)

7.2 Routine Entry and Pre-entry Inspection

- Before using lifting equipment employees shall carry out a visual inspection which shall encompass the following:
 - Checking for excessive wear of the item
 - Checking for obvious damage or defects
 - Checking of harnesses and belts for excessive wear

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- Checking the operation of fall arrest locking mechanisms
 - Checking the length of ropes and slings for serious cuts and abrasions
- Where an item is identified as damaged or faulty it shall be removed from service and tagged with a “Do Not Operate” tag until such time as it has been inspected by a competent person and determined if it is safe to continue to be used.

7.3 Periodic Inspection and maintenance of lifting equipment

Inspections shall be carried out in accordance the relevant Australian Standard or Manufacturers Specification at the frequency specified below.

Lifting Equipment	Frequency of Inspection
Lifting Chains and Chain Slings	3 Monthly
Webbing Slings	3 Monthly
Flexible Steel Wire Rope (FSWR)	3 Monthly
Fall Arrest Belts and Harnesses	6 Monthly
Confined Space Entry Tripods	6 Monthly
Confined Space Entry Retrieval Systems (for example: Rolgliss or Winches)	6 Monthly
Fibre Ropes (including Tag Lines and Life Lines)	3 Monthly

7.4 Faults and Non Compliance

7.4.1 Minor

- Minor non-compliances must be noted on the relevant inspection record. Any uncertainty as to whether the issue is minor or major should be referred to the relevant Work Coordinator. Where this occurs the item must be tagged with a “Do No Operate” tag and removed from service until such time as it is verified as safe to use.
- Where an item is to be repaired it must be tagged with a “Do Not Operate” tag and removed from service until such time as the repairer certifies that the item is fit for use.
- Any item that has returned from repair shall be inspected with particular attention paid to whether the item has been correctly assembled and that all parts are present.

7.4.2 Major

- Any item that has been identified with major faults shall be repaired or discarded. Prior to disposal the item must be rendered unable to be used by another person.
- Where an item may be repaired it must be tagged with a “Do Not Operate” tag and removed from service until such time as the repairer certifies that the item is fit for use.
- Any item that has returned from repair shall be inspected with particular attention paid to whether the item has been correctly assembled and that all parts are present.

7.5 Training

Only persons who have completed the following training may carry out inspection of lifting equipment

Lifting Equipment	Training
Lifting Chains and Chain Slings	Dogger, Rigger or Rope, Chain

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	and Sling Inspection Course
Webbing Slings	Dogger, Rigger or Rope, Chain and Sling Inspection Course
Flexible Steel Wire Rope (FSWR)	Dogger, Rigger or Rope, Chain and Sling Inspection Course
Fall Arrest Belts and Harnesses	Confined Space Entry Course
Confined Space Entry Tripods	Confined Space Entry Course
Confined Space Entry Retrieval Systems (for example: Rolgliss or Winches)	Confined Space Entry Course
Fibre Ropes (including Tag Lines and Life Lines)	Dogger, Rigger or Rope, Chain and Sling Inspection Course

7.6 Records

7.6.1 Inspection Records

An Individual Inspection record shall be kept for each lifting item (either hard copy or electronic data base). This shall be used to record the results of inspections. Individual items must be able to be readily identified against the record, in some instances this may require additional non-destructive markings on the item to differentiate them from other identical items exist. .

7.6.2 Lifting Items Register

- All Items of Lifting equipment must be entered into a Register which shall include the following information:
 - Name of Item
 - Goulburn Valley Water Identification Number
 - Serial Number details, Safe working Loads, etc.
 - Item Location
- The Lifting Items Register will be made available on Sharepoint (OH&S⇒Plant and Equipment)

7.7 New Items

All new lifting equipment must be inspected prior to use. This is to assist in identifying any manufacturing faults or damage during transit.

An individual record must be developed for each new item

Details of the new item must be entered into the Lifting Items Register.

8.0 Appendices

Appendix A - Inspection Record – Fibre Rope

Appendix B - Inspection Record: Belts and Harnesses

Appendix C - Inspection Record: Flexible Steel Wire Rope

Appendix D - Inspection Record: Lifting Chain / Chain Slings

Appendix E - Inspection Record: Webbing Slings

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Appendix A: Inspection Record – Fibre Rope



Inspection Record – Quality Form: QF-GVW-313 (a) Fibre Rope (tag lines, life lines)

Inspection may only be completed by a Dogger or person who has completed Rope, Chain and Sling Inspection Course

Person completing inspection:		Year:		Location of item:					
Asset or other Number:		Rope Length:		Rope Diameter:		Rope SWL:			
Rope checked for the following		3 Months		6 Months		9 Months		12 Months	
		Date:		Date:		Date:		Date:	
		Inspected	Action	Inspected	Action	Inspected	Action	Inspected	Action
1.	Rope checked for brittleness and charring, powdering or fracture of the central yarns								
2.	Rope checked for discolouration								
3.	Rope checked for mildew								
4.	Rope checked for thickening								
5.	Rope checked for presence of grit or dirt								
6.	Rope checked for excessive looseness of strands								
7.	Rope checked for high stranding								
8.	Rope checked for external wear (check for furry appearance)								
9.	Diameter checked								
10.	Weight of rope checked								
11.	Length of rope checked								
Comments:									

Actions:
 OK = Rope condition satisfactory
 DD = Destroy and Discard Rope
 RR = Repair or Replace Damaged Rope



Inspection Record - Quality Form: QF-GVW-313 (b) Belts and Harnesses (6 monthly)

Inspection may only be completed by person who has completed confined space entry training. Items must be checked as per the manufacturer's recommendations.

Person completing inspection:		Year:				Location of item:			
Asset or other Number:				Item Type:					
Chain checked for the following		6 Months		12 Months		18 Months		24 Months	
		Date:		Date:		Date:		Date:	
		Inspected	Action	Inspected	Action	Inspected	Action	Inspected	Action
1.	Webbing – cuts, tears and abrasion damage								
2.	Webbing – stretching								
3.	Webbing – heat, corrosive or solvent damage								
4.	Webbing – rotting, mildew UV damage								
5.	Snap Hooks and Karabiners – wear, distortion and cracks								
6.	Snap Hooks and Karabiners – broken or damaged movement								
7.	Snap Hooks and Karabiners – dirt, grit or other obstructions								
8.	D-rings, buckles and adjusters – wear, distortion and cracks								
9.	Snap Hooks and Karabiners – cross section wear								
10.	Storage								
11.	Condition of Fixed Length Lanyard and or energy absorber								
12.	Identification Markings in place								
Comments:									

Actions:
 OK = Belts Harness condition satisfactory
 DD = Destroy and Discard Belt / Harness or part of
 RR = Repair or Replace Damaged Belt / Harness or part of



Inspection Record – Quality Form: QF-GVW-313 (c) Flexible Steel Wire Rope (FSWR)

Inspection may only be completed by a Dogger or person who has completed Rope, Chain and Sling Inspection Course

Person completing inspection:		Year:				Location of item:			
Asset or other Number:				Diameter of Rope:					
Chain checked for the following		3 Months		6 Months		9 Months		12 Months	
		Date:		Date:		Date:		Date:	
		Inspected	Action	Inspected	Action	Inspected	Action	Inspected	Action
1.	Abrasion and core collapse								
2.	Stretching								
3.	Broken or damaged wires								
4.	Corrosion								
5.	Kinks, knots or fractures								
6.	Birdcaging - faulty whipping of base ends allows the strands to loosen from their proper tight lay. It can be caused by rotation of the end of the rope or a sudden release from high loading.								
7.	High stranding - where a strand has slipped around the lay and projects above the surface due to faulty whipping and cutting of the rope ends.								
8.	Broken wires below metal socket, end fitting or machine splice								
9.	Crushed or jammed strands								
10.	Rope Storage								
11.	Abrasion and core collapse								
Comments:									

Actions: OK = Rope condition satisfactory
 DD = Destroy and Discard Rope
 RR = Repair or Replace Damaged Rope



Inspection Record (3 Monthly) – Quality Form: QF-GVW-313 (d) Lifting Chain / Chain Slings

Inspection may only be completed by a Dogger or person who has completed Rope, Chain and Sling Inspection Course

Person completing inspection:		Year:		Location of item:					
Asset or other Number:	Chain Length:		Chain grade:		Chain SWL:				
Chain checked for the following		3 Months		6 Months		9 Months		12 Months	
		Date:		Date:		Date:		Date:	
		Inspected	Action	Inspected	Action	Inspected	Action	Inspected	Action
1.	Information tag and stamps in place and legible/ readable								
2.	Grade on tag matches grade markings on chain								
3.	All components are of the same grade and SWL as chain								
4.	Stretching of links (links frozen together is a sign of stretching)								
5.	Gouging and nicks of each links (must be less than 10% of the diameter)								
6.	Wear of each link								
7.	Checked for Cracked links								
8.	Hook, Oblong Link, Hammerlock – check for wear, stretch, distortion, gouging								
9.	Elongation wear of chain / any significant increase in effective length								
10.	Upper and Terminal links in good order								
11.	Chain storage OK								
Comments:									

Actions:
 OK = Sling condition satisfactory
 DD = Destroy and Discard Sling or part of Sling
 RR = Repair or Replace Damaged Sling or Part of Sling



Inspection Record (3 Monthly) – Quality Form: QF-GVW-313 (e) Webbing Slings

Inspection may only be completed by a Dogger or person who has completed Rope, Chain and Sling Inspection Course

Person completing inspection:		Year:				Location of item:			
Serial Number:				Sling Length:					
Sling checked for the following		3 Months		6 Months		9 Months		12 Months	
		Date:		Date:		Date:		Date:	
		Inspected	Action	Inspected	Action	Inspected	Action	Inspected	Action
1.	Sling labelled with SWL								
2.	Abrasion or cuts								
3.	Internal wear (thickening of the sling or grit and dirt)								
4.	Protective coating of sling								
5.	Temperature, sunlight or chemical damage (indicated by discolouration)								
6.	Damage to the label or stitching								
7.	Damage to eyes or terminal attachments								
8.	Condition of sleeve (where fitted)								
9.	Sling storage								
10.	Sling labelled with SWL								
Comments:									

Actions: **OK = Sling condition satisfactory**
 DD = Destroy and Discard Sling
 RR = Repair or Replace Damaged Sling