



SUBJECT	DATE ISSUED	REVISION NUMBER
Inspection and Maintenance	30 th September 2011	Revision 2

The requirements for the maintenance of height safety equipment are included in AS/NZS1891.4 2009 which covers the selection, safe use and maintenance of industrial fall arrest systems and devices designed for use in restraint technique, limited free fall and free fall applications. This Standard should be referenced for full details on equipment maintenance and inspection as this briefing note only provides a summary. Industrial fall arrest systems and devices include safety harnesses, horizontal lifelines and rails, fall arrest devices and associated lanyards, connectors, anchorages and fittings. Maintenance covers the maintenance requirements and the recommendations for inspection, storage, servicing and cleaning of this equipment.

Requirements of the Standard

The standard requires that all personal use equipment (harness, lanyard, connectors and fall arrest devices) and common use equipment (ropes, slings, fall arrest devices and mobile attachment devices) are inspected by the competent operator before and after each use. Where the operator is not competent (e.g. during operator training), these inspections should be carried out by an operator who is competent or by a height safety supervisor. The standard defines the following:-

Competent Person

A person who, through a combination of training, knowledge and experience, has acquired knowledge and skills enabling that person to correctly perform a specified task.

Height Safety Operator

A person who is able to perform harness based work at heights under the direct supervision of a height safety supervisor.

Height Safety Supervisor

A person who is competent in the skills needed to perform harness based work at heights, to supervise other operators including those at entry level and to participate in first response rescue.

Height Safety Manager

A person who is competent in the selection, design, manufacture or installation of height safety systems or equipment, or the development of control measures or work practices.

Height Safety Equipment Inspector

A person who is competent in the skills needed to detect faults in height safety equipment and determine remedial action

Operators should be aware that their lives depend on the efficiency and durability of the equipment and proper inspection is their first line of defence against the hazards of faulty equipment.

Training and assessment of operators shall include competency in carrying out the operator inspections.

Inspections shall be by sight and touch and shall include the opening of any equipment where access for daily inspection is provided to ensure that the internal components are in good condition.

Where equipment is considered in any way doubtful by the competent person, it should be tagged out of service. A label should be attached to the equipment indicating the defect and referred to a height safety equipment inspector for further action.

Regular Scheduled Periodic Inspections

The requirements for the inspection of equipment are summarised from AS/NZS1891.4

Item	Frequency
Personal equipment including harnesses, lanyards, connectors, fall arrest devices including common use devices	Before and after each use. By a height safety operator or – if not competent – by another competent person.
Harnesses, lanyards, associated personal equipment. Fall arrest devices (external inspection only) Ropes and slings	6 monthly inspection. By a height safety equipment inspector
Anchorage – Drilled in type or attached to timber frames Anchorage – Other types	12 monthly inspection As recommended by manufacturer to a maximum of 5 years 12 monthly inspection in the absence of such recommendation By a height safety equipment inspector
Fall arrest devices – Full service	As recommended by manufacturer to a maximum of 5 years 12 monthly service in the absence of such recommendation By a height safety equipment inspector
Horizontal and Vertical Lifelines – steel rope or rail	As recommended by manufacturer to a maximum of 5 years 12 monthly service in the absence of such recommendation By a height safety equipment inspector
Horizontal and Vertical Lifelines – Fibre rope / web	6 monthly inspection By a height safety equipment inspector
All items that have been stressed as a result of a fall	Inspection before further use By a height safety equipment inspector

Notes:- The standard advises that all items that are used under harsh conditions may require to be inspected more frequently – generally at twice the above frequency.

All inspections except those by the operator are to be documented.

Record Keeping

A record card, history sheet or similar record should be kept for each item of equipment detailing the maintenance and inspection history of the item. This documentation shall be freely available to the operator and users for at least the life of the equipment.

Data to be maintained on equipment includes the following where appropriate:-

- Manufacturer's supplier's or installer's name and address.
- Manufacturer's batch, serial or identifying number.
- Year of manufacture.
- Date of purchase.
- Date first put into service.
- Dates and details of inspections and services.
- Details of recommended connections to harnesses.
- Type of anchorage to be used.
- Suitability and limitations on various usages.

Appendix A (attached) details the checklist for the inspection of harnesses, lanyards and associated equipment as detailed in Appendix C of AS/NZS1891.4

However, the Manufacturer's User Instruction Manuals should be used to establish precise details of equipment inspection and maintenance requirements.

Other Inspection Requirements

Initial Entry to Service

Each item shall be inspected before being placed into service.

Re-Entry after Storage

Each item shall be inspected before being placed into service after a period of storage or out of service in excess of the nominated inspection or service interval for that item.

Re-Entry after Repair

Each item shall be inspected before being placed into service with particular attention to whether the item has been correctly and completely repaired and reassembled.

Equipment that has Arrested a Fall or Shows a Defect

Any piece of equipment – personal or permanently installed shall be withdrawn from service immediately and a replacement obtained. The equipment should be examined by a height safety inspector to decide whether the equipment should be destroyed or repaired.

Life Expired Equipment

Personal equipment shall be removed from service and destroyed.

Horizontal lifelines and rails should be taken out of service and dismantled or arrangements made for re-certification.

Appendix A – Checklist for Inspection of Harnesses, Lanyards and Associated Equipment
(From AS / NZS1891.4(2009) – Appendix C)

Component	Condition or fault to be checked
Webbing	Cuts or tears Abrasion damage especially where there is contact with hardware Excessive stretching Damage due to contact with heat, corrosives, or solvents Deterioration due to rotting, mildew, or ultraviolet exposure Activation of fall indicators where fitted
Snap hooks and karabiners	Distortion of hook or latch Cracks or forging folds Wear at swivels and latch pivot pin Open rollers Free movement of the latch over its full travel Broken, weak or misplaced latch springs (compare if possible with a new snap hook) Free from dirt or other obstructions, e.g. rust
D-Rings	Excessive ‘vertical’ movement of the straight portion of the D-ring where it is retained by the webbing, so that the corners between the straight and curved sections of the D become completely exposed. NOTE: Excessive vertical movement of the ring in its mounting can allow the nose of larger snap hooks to become lodged behind the straight portion of the D, in which position the snap hook can often accidentally ‘roll out’ of the D under load. Cracks, especially at the intersection of the straight and curved portions Distortion or other physical damage of the D-ring Excessive loss of cross-section due to wear
Buckles and Adjusters	Distortion or other physical damage Cracks and forging laps where applicable Bent tongues Open rollers
Sewing	Broken, cut or worn threads Damage or weakening of threads due to contact with heat, corrosives, solvents or mildew
Ropes	Cuts Abrasion or fraying Stretching Damage due to contact with heat, corrosives, solvents, etc Deterioration due to ultraviolet light or mildew
Chains	Physical damage Security of attachments to snap hooks, rings, and similar components

Appendix B – Checklist for Inspection of Fall Arrest Devices

(From AS / NZS1891.4(2009) – Appendix C)

Component	Condition / Fault to be Checked
Rope or webbing including anchorage lines for Type 2/3 devices	Cuts Abrasion or fraying Stretching Damage due to contact with heat, corrosive or solvents Excessive dirt or grease impregnation Anchorage of the anchorage line to the anchorage point Anchorage of the rope end to the drum when the rope is fully extended (Type 2/3 devices)
Fall arrest device body Mounting Ring Body Fall arrest indicator Correct use labels and service label or tag	Physical damage or wear, especially at any pivot points Cracks especially at corners Mounting security Physical damage such as significant dents, distortion, corrosion, or cracks. Presence of foreign bodies such as small stones within body (to be checked without dismantling) Loose or missing screws, nuts or similar objects (external check only) Position of the clutch compression indicator button (fitted only to rewind drums with steel rope) Signs of activation Presence and legibility
Locking mechanism and rope guides	Excessive wear or ridging on externally visible rope guides Secure locking and holding of rope locking mechanism when the rope is given a sharp tug. Free running of rope through the anchorage with no tendency to stick or bind, and on rewind drum anchorages, complete rewinding of the rope without loss of tension
Hardware	Condition and locking action of any associated snaphooks or links
Fall Indicators	Evidence of activation

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The Working at Height Association Limited.

www.waha.org.au