

## Horizontal Lifeline and Static Line Systems Summary of Safety Requirements



Issue 2  
April 2010

***Horizontal lifeline and static line systems should only be used/installed once these requirements are met and approval has been given by site management.***

**Before putting horizontal lifeline or static line systems in place site management must ensure:**

- A safety plan including emergency procedures is developed
- More effective means of fall prevention have not been overlooked

**The safety plan should be monitored by site management, it should include:**

- Suitability of the system for the operating environment
- Workers installing systems are qualified to do so
- Workers using system have been suitably trained in harness use
- Prior to starting, OSH Notification of Particularly Hazardous Work form has been completed for any work more than 5 metres high and a copy provided to Site Management before starting work
- An effective means of retrieval has been provided for in the event that a fall may result in workers suffering suspension trauma

### Types of Systems

***Flexible lines-Proprietary systems*** are also known as 'engineered' systems. These are flexible lines with end anchorages and usually intermediate anchorages, often with travelling attachment devices. These systems are usually provided either in kit form with rigging instructions, or as a completed system rigged by an installer that has been approved by the supplier or manufacturer of that system.

***Flexible lines-Prescribed configurations*** are flexible lines with end and intermediate anchorages, like proprietary systems, but rely on conventional attachment hardware such as snap-hooks and karabiners for connection of personal fall-arrest equipment to the line. For safe operation, strict observance of the requirements of AS/NZS 1891.2 must be adhered to.

**The following system specification may be used instead of using an engineer designed system:**

- System to have maximum spans between intermediate supports of up to 6 metres
- No more than two persons are to be on the static line at any one time
- All persons are using lanyards with personal energy absorbers or another system to reduce deceleration forces to 6kN
- Line to be 10mm (minimum) diameter flexible steel wire rope (6 x 19 to 6 x 24 galvanised)
- Line to have a minimum breaking load 44 kN
- Line secured with a hard eye and saddles to prevent damaging the wire
- Sag - Single span: Approximately 50mm per metre, i.e. 6m span = 300mm of sag. This sag is most important as greater tension will increase the forces exerted on the anchor

- Sag - 2-3 continuous spans: Approximately 30mm per metre, i.e. 6m = 180 mm
- Sag - 4 or more continuous spans: No minimum sag required but line should not be over-tensioned
- End anchorages: Capable of supporting an imposed load of 44 kN. Lines must be attached to structural members by way of eyebolts or slings. If slings are set up on vertical members, a basket hitch with double wrap must be used; included sling leg angle must not exceed 120°
- Intermediate anchorages: Capable of supporting an imposed load of 12 kN. Lines must not deviate more than 15° at intermediate anchorages

**A site management representative should monitor horizontal lifeline or static line use to ensure:**

- Personal protective equipment appropriate to free-fall conditions is worn in conjunction with a horizontal life line
- Only systems which have been designed to resist the fall-arrest forces caused by near simultaneous multiple falls allows more than one person at a time to be connected to any one span of the system
- Adequate fall clearance is provided. When arresting a fall, flexible life line systems will invariably deflect downwards to a greater extent than static loading might suggest
- The user can not suffer from pendulum effect. Where a fall takes place near an end or intermediate anchorage on a flexible line, the attachment device will tend to run towards the centre of the span
- That lines rigged at sufficient distance from fall edge to ensure free fall distance is a maximum of 2 metres
- Flexible line systems are not subjected to any operator loading in normal service other than substantially horizontal restraint forces, i.e. they must not be used for work positioning purposes, unless specifically designed and certified for such use
- Provision is made for users to approach and connect onto a horizontal lifeline system without being exposed to a fall-risk situation
- All termination hardware including turnbuckles is effectively locked or otherwise secured from inadvertent opening
- The line tension is within limits set by the supplier or designer
- Information is available to all users of line systems covering the following: 
  - Manufacturer's and installer's name and installation date
  - A unique identification number
  - An instruction that a personal energy absorber or a fall-arrest device with energy absorbing properties must be used
  - Any special instructions for use, including the number of users allowed on the system or on any one span at once
  - Servicing requirements and instructions, together with inspection and servicing intervals and the dates on which they are to be carried out

**Managers & Supervisors should ensure Horizontal Lifeline and Static Line Systems supplied/used comply with:**  
 AS/NZS 1891.2 - Industrial Fall Arrest Systems and Devices – Horizontal lifeline and rail systems  
 AS/NZS 1891.4 - I Industrial Fall Arrest Systems and Devices – Selection, use and maintenance  
 (OSH) Guidelines for the Provision of Facilities and General Safety in the Construction Industry  
 (OSH) Guidelines for the Prevention of Falls  
 Manufacturers specifications  
 Engineers' Design specifications

**Employers and Workers should ensure that work practices comply with:**  
 Health & Safety in Employment Act 1992  
 Health & Safety in Employment Regulations

For more information refer to: [www.osh.dol.govt.nz](http://www.osh.dol.govt.nz) [www.standards.co.nz](http://www.standards.co.nz)