



Workplace Health and Safety Queensland

Safety Alert

Suspended scaffold failure

Purpose

To provide information about the risks associated with the installation and operation of suspended scaffolds (i.e. swing-stage cradles), and control measures to minimise these risks.

Further information on the safe use of scaffolding can be obtained from the [Scaffolding Code of Practice 2004](#).

Background

A number of serious incidents have recently occurred in Queensland and other parts of Australia when workers have fallen from swing-stage cradles. On 21 June 2008, two workers were fatally injured at a Gold Coast construction site when the support system to the suspended scaffold appeared to have failed.

An alert was first published in June 2008. This alert provides an update following recommendations from an [independent review by technical experts](#), and consultation with representatives from Workplace Health and Safety Queensland (WHSQ), the relevant trade unions and the construction (including scaffolding) industry.

Obligations to ensure safe use

Following the independent review and industry consultation, WHSQ is implementing measures to improve safety and minimise the risks associated with suspended scaffolds.

Principal contractors, employers and self-employed persons have an obligation to assess and manage the risks of using suspended scaffolds. The principal contractor, building owner, or representative of the building owner/principal contractor is to sight all the relevant documentation as per the [Principal contractor or building owner swing-stage statement](#) (WHSQ SS 01). The documents to be kept on site, specific to swing-stage installation and operation, are:

- engineer's drawing for the swing-stage suspension system
- engineer's design certification letter for the design of the swing-stage
- engineer's verification statement that the swing-stage has been erected in accordance with the design documentation for the initial set-up of the swing-stage at this location (including a load test)
- engineer's certification letter to verify the supporting structure is adequate to support a swing-stage suspension system
- advanced scaffolding or advanced rigging certificate of person erecting swing-stage suspension system
- signed [Principal contractor or building owner swing-stage statement](#) (WHSQ SS 01)
- signed [Competent person benchmarks for swing-stage set-up verification](#) (WHSQ SS 02)
- competent person's [Swing-stage suspension system verification statement](#) (WHSQ SS 03) completed and signed, including load testing, for relocation of the system (not the initial set-up).

Risk assessment and risk management for suspended scaffolds includes:

1. Design and engineering verification

All components of the suspension rig should be designed and documented by a qualified and suitably experienced engineer. All areas of design for a suspended scaffolding system need to receive a formal sign-off from a qualified and suitably experienced engineer. The formal sign-off for the swing-stage system is to include the needle suspension system, cradle, and hoist.

Prior to being set up, engineering verification of the structural adequacy of the suspension system and the cradle is to be obtained by the installer of the scaffold. The manufacturers of the cradle and hoist are to provide the structural verification and information on the maximum working load limit (WLL). The suspension and supporting structures are to be designed and verified by a suitably qualified engineer.

2. Site-specific induction

A principal contractor must ensure a person has had a site-specific induction before that person begins using the swing-stage. The induction needs to address the contents of the [construction safety plan](#). In particular it must address the safe operation of the swing-stage scaffold. The principal contractor must make a record of the people inducted and the date it was given. The record must be kept for the duration of the construction work.

3. Loading

The working load limit (WLL) is to be clearly marked on the cradle of the suspended scaffold. The WLL of a cradle will depend on factors such as its length, type of construction and material type. Longer cradles will generally have a reduced WLL. Materials loaded into the cradle should be evenly distributed and not be concentrated in one area. To prevent overloading, swing-stage operators must verify the mass of the load to be included in the cradle. A load test must be conducted in accordance with [Swing-stage load test procedure](#) (WHSQ SS 04) at each installation of a swing-stage system.

4. Load-limiting devices

[Australian Standard 1576 Part 4 - Suspended scaffolding](#) (non Queensland Government), specifies electric scaffold hoists shall have a device to limit the lifting capacity of the hoist to a maximum of 1.25 times the rating of the hoist. Whatever the hoist stall capacity is, the suspension system and the cradle is to be designed to withstand the stalling load applied by all scaffold hoists in use. This feature prevents failure in the event of the cradle snagging on an obstruction.

5. Installation

At the first installation of a swing-stage scaffold system, a qualified, experienced engineer must provide verification that the swing-stage scaffold system has been installed safely. Persons holding an advanced rigger or advanced scaffolder certificate under the National certification system must be engaged to install suspended scaffolds. On subsequent moves and reinstallation of the swing-stage scaffold system on that project, the reinstallation must be reinspected and verified. If the reinstallation is different to that which was originally verified by the engineer, an engineer

must approve the new installation. If the reinstallation is set-up as per the approved system originally verified by the engineer, then a competent person can check and verify the system's set-up. A competent person, for this activity, means a person who meets the criteria outlined in the [Competent person benchmarks for swing-stage set-up verification](#) (WHSQ SS 02). The competent person and their employer must sign WHSQ SS 02 to verify the competent person's statement of competency.

The competent person must complete a [Swing-stage suspension system verification statement](#) (WHSQ SS 03). This includes conducting a load test, in accordance with [Swing-stage load test procedure](#) (WHSQ SS 04), for each installation of the swing-stage system.

6. Inspection

Inspections to provide verification are to be carried out as outlined in previous sections. In addition, swing-stage components are to be inspected for damage, wear and cracks before use and at pre-determined intervals. Some cracks may not normally be visible to the eye. Non-destructive testing is to be performed to check for cracks in high stress areas.

7. Fall arrest systems

Persons located in swing-stage cradles are to wear fall arrest harnesses attached to a properly designed anchorage system. A travel restraint system, where a fall is not possible, attached to a static line in the cradle may be used. A thorough assessment needs to be undertaken to ensure appropriate control measures are in place to address any secondary risks that might arise. Fall arrest systems must comply with part 20 of the [Workplace Health and Safety Regulation 2008](#) and are to be designed by a competent person. Guidance on the design of fall arrest systems is also provided in [Australian Standard AS 1891 - Industrial fall arrest systems and devices](#) (non Queensland Government).

Legislative requirements

The [Workplace Health and Safety Act 1995](#) imposes health and safety obligations on all persons conducting a business or undertaking, whether as employer, self-employed person or otherwise (and in their capacity as principal contractors) designers, manufacturers, suppliers, installers and owners of plant, and workers. The information contained in this alert is designed to help people meet their obligations regarding the management of risks associated with swing-stages. More information on the safe use of scaffolding can be obtained from the [Scaffolding Code of Practice 2004](#).

Last updated 25 September 2008

For further information, contact Workplace Health and Safety Queensland.

Phone 1300 369 915

Internet www.worksafe.qld.gov.au