

Falsework Safety — Do's and Don'ts

General

- Do identify and fix falsework members correctly, according to drawings or standard details.



- Don't use faulty materials.
- Do rectify unbalanced loads, acting on formwork, promptly.
- Don't deposit materials or spoil against the side of the falsework.
- Do control the rate of concrete pour.
- Don't subject falsework to vibration and shock loads.
- Do inspect falsework during and after concrete placement to detect any abnormal deflection that could lead to failure.
- Don't prematurely remove props.
- Do check that falsework can be dismantled.

Foundations

- Do make sure that there are adequate sleepers or sole plates, that they have been set level, and that they are adequately bedded and fixed in position.
- Don't place sleepers or sole plates over soft areas or over unsuitable soil.

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- Do check that the ground has not deteriorated due to previous excavations, adjacent drains or pipelines, erosion, shrinkage, etc.
- Do check for signs of settlement or possible washout after heavy rain and flooding.

Vertical Supports

- Do make sure that supports are plumb.
- Do check that the props being used are correct in size, number and location.
- Do locate and secure heads of props centrally to the underside of supported bearer.
- Do locate base plates securely over the centre line of the sole plate.
- Do check that base plates, capping plates or forkheads are not bent.
- Don't extend screw jacks beyond the limit recommended by the manufacturer.
- Do tighten bolts and screw jacks correctly.
- Do use correct locking pins in adjustable steel props.
- Do use timber props and wedges that are sound and free from defects.
- Do tighten bolts and screw jacks correctly.
- Do use correct locking pins in adjustable steel props.

Horizontal Bearers

- Do locate bearers on the centre line of supports and fix securely.
- Do check that there is no crushing at supports due to inadequate bearing area.
- Do use paired timber members that do not vary in depth, and are gauged and secured together with staggered joints.
- Do check that joints in paired steel beams are staggered between supports.

Bracing

- Do make sure that members are placed as specified, and connected as close to node points as possible.
- Do tighten couplers or bolt connections properly.

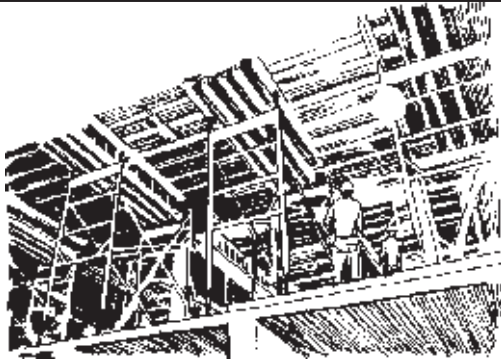
Falsework



Important Note:

All the publications in the Publications Archive contain the best guidance available at the time of publishing. However, you should consider the effect of any changes to the law since then. You should also check that the Standards referred to are still current.





General

Falsework is any temporary structure or framework used in construction work to support materials, equipment or any assembly.

Falsework is used to support a permanent structure during its erection and until it becomes self-supporting. Falsework does not include scaffolding.

Falsework may be conveniently divided into two categories:

- support for floors and beams involving light loading and low height of support (within the range of standard props) and capable of solution by standard designs;
- support situations requiring individual designs by competent persons.

Falsework should be designed in accordance with sound engineering practice, and should be constructed according to the drawing of standard design details.

The design and supervision of falsework should be carried out by persons who are competent and experienced in this kind of work. Falsework should likewise be erected by experienced tradespeople.

Materials

Materials used in falsework, such as timber, tubes and couplers, adjustable steel props, and proprietary frames should comply with relevant New Zealand Standards. Materials should be checked for damage, corrosion or other defects, and should be stored and handled carefully during erection.

Recommended Safe Practices

Foundations

Vertical supports of a falsework structure should be founded on a level base that is strong enough to carry the imposed loads. Topsoil and weak material at founding levels should be removed and the bearing surface compacted if necessary. Sole plates under props may need to be bedded on a well-graded granular material, or on a layer of concrete blinding, to get an even bearing.

Bracing

All falsework structures are subject to horizontal forces which may be caused by wind, settlement of foundations, supports being out of plumb or surge loads due to concrete discharge from skips or pumps. Bracing must therefore be provided to ensure that the falsework is stable. A method of bracing props is given in Appendix C of the *Falsework* publication.



Loading and Dismantling

Falsework should be loaded and dismantled according to the designer's drawings or instructions.

Precast concrete units or structural steel beams should not be dragged into final positions on the falsework as this can produce large lateral forces and result in overloading of the falsework.

The sequence and rate of pouring concrete onto form work should be controlled; concrete should not be allowed to accumulate unnecessarily and cause local overloading. Frequent checks of the support system should be carried out during concreting.

Likewise, dismantling of falsework should be done in a systematic manner. The striking of formwork and removal of falsework under floor slabs are potential hazards. When the falsework supports are lowered and large areas of formwork are to be dropped on to the lowered falsework supports, the supervisor should check that the impact loadings do not overstress the falsework.

Other Safety Measures

Falsework for structures over any area of public access, or over construction roads, should be protected where necessary by a barrier or other means to prevent damage or interference to its soundness.

Suitable provisions should be made to keep unauthorised persons (or mobile plant) away from the falsework and to safeguard it from accidental impact.

Falsework should be inspected before and immediately after loading, and particularly after it has been subjected to strong winds, extreme temperatures, heavy rain or earthquakes. Workers should not be employed in the vicinity of or under structures supported by falsework while the pouring of concrete is in progress.

Propping of concrete block walls, tilt-up wall panels and precast concrete flooring need particular attention. Guidelines for temporary support of these structures are detailed in Appendix E of the *Falsework* publication.

