

Climbing Walls (Scaffold)



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Introduction

This is the first edition on the subject of erection and use of climbing towers made of scaffolding within The Scout Association. It provides technical support to those who wish to build temporary or permanent structures from scaffolding. If other forms of permanent structure are contemplated attention is drawn to the British Mountaineering Council's document - Climbing Walls.

Further editions may be published in the light of experience and any changes in national guidelines. Publication of future editions will be notified in SCOUTING Magazine, Talking Points and the Activities Newsletter.

General

There are almost as many designs for climbing and abseiling walls as there are climbing and abseiling walls in existence. This very fact means that the production of guidelines for the construction and maintenance of such a wall is difficult.

This document has been prepared to give guidelines only on walls that are constructed with scaffolding towers. It is recommended that if at all possible, a wall should be secured to an immovable object such as a building or tree (with suitable protection for the tree) and braced if possible.

Freestanding towers pose the greatest potential risk from overturning. The risk is heightened in two respects when used as a wall. First, sheeted towers greatly increase the resistance to wind by acting as a sail. Secondly, scaffolding towers are designed to have the load within the confines of the tower, a person standing on top and all equipment being passed up the middle. Climbing walls are specifically built to have weights on the outside of the scaffolding causing

an unnatural stress to the tower.

Aluminium alloy towers are very light and the centre of gravity is not far below the top of the tower, especially when people are on the platform.

Height

The height of a tower should be calculated as follows:

Maximum height to least base ratio 3:1
(For example, least base width 6ft - maximum height of tower 18ft).

The base size can sometimes be increased by the use of outriggers or stabilisers. It is strongly advised that towers should be externally braced and stayed.

Access

Access to the working platform should be by conventional ladder inside the framework of the tower. Caving ladders are not suitable due to the training required to use them properly, the extra safety ropes needed and the problems of evacuating anyone who does not wish to abseil off the top.

Belay and Abseil Ropes

Every effort should be made to ensure that a failure of the attachment points does not affect the structural integrity of the tower. It is not acceptable to attach safety or active ropes to the guard rails.

The Rules of The Scout Association demand that the safety and active ropes are attached to separate anchorage points to minimise the dangers involved.

General

Whether a tower is fastened to a building or tree, or is freestanding, a series of checks should be done to ensure the safety of the tower. On erection, the tower must be vertical and preferably built on level ground. If the tower is being secured to a building, ensure that the structure will be able to take the fastenings and the stresses and strains to which the building will be subjected.

The platform at the top of the scaffolding must be close boarded and fitted with a guardrail about 1 m above the "floor" level, running continuously around all those sides of the tower (normally three) which are not actually used for climbing or abseiling. Toe boards (about 150mm high) should be fixed similarly on all sides of the tower, except those actually used for climbing or abseiling, to ensure that equipment is not knocked off the top of the tower (if it is practical to fit part toe boards securely to the side of the tower used for access, this too is advised).

An area around the bottom of the tower should be roped off so that only those who are on the tower, those supervising and those bottom roping, are inside the control area. Those waiting or spectating should be kept at a safe distance back from the tower. The numbers on the tower must be strictly controlled. A maximum of 4 'per active rope is recommended.

The erection of a tower or the supervision of the erection should be by a person holding a competency certificate in scaffolding of the Construction Industry Training Board. If a tower is going to be permanent then it is strongly recommended that a qualified scaffolder assists with the design, building and checking at regular intervals of the tower. Full and exhaustive checks on the equipment, ties and foundations should be undertaken to ensure that the location is suitable.

Some towers are simple to erect as they slot together peg in hole style. Although these are easy to build care must be taken to ensure they are properly erected as often the joints, by their very nature, are loose and this will affect stability.

Safety Checks

Whatever the style of tower, each tower must be regularly and rigorously checked to ensure its safety. The tower should be checked every session to assess wear and tear and checks should be especially thorough following adverse weather conditions such as high wind or heavy rain.

The following is a suggested list of checks, although these are not exhaustive due to the variety of climbing towers available.

1. Are all foundations secure?
2. Are all outriggers in position and secure?
3. Are all diagonals in place and secure?
4. Are all ties, guy ropes and anchorage tight, secure and well maintained?
5. Are all ladders and boards secure and show no signs of excessive wear?
6. Are all hand holds and toe holds secure?
7. Are the platform and tie up points safe and secure?

Upon discovery of cracked, heavily corroded or damaged components, damaged hand holds, abseil boards or scaffold board, activities on the tower should be suspended until the equipment is either made safe or replaced.

Although we have very few reports of accidents occurring on or with scaffolding climbing towers, it is as well that a cautious approach is adopted. If you feel worried or concerned about erecting and operating a climbing wall, talk to local climbers and other experts in the field who will often be willing to offer assistance.

Publications Cross Reference

Current Editions of:

Poiley, Organisation and Rules of the Scout Association
Climbing Walls - Published by British Mountaineering Council - ISBN 0 906577 82 9