



CODE OF PRACTICE

The installation and operation of commercial zip lines, rope adventure courses and associated aerial adventure activities

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1. Introduction

The requirements laid down and recommendations made in this code of practice are intended solely to ensure safety in the installation and operation of zip lines and rope adventure courses.

2. Scope

This code of practice covers the general safety aspects, construction, operation and maintenance of commercial zip lines and rope adventure courses and associated aerial adventure activities (hereinafter these are all referred to as “the activities”).

3. Design

The attention of users of this code of practice is drawn to the relevant regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993). A registered professional engineer having experience in this field shall be responsible for the certification of this design and installation such as to ensure its safe operation.

The design of the activities shall conform to acceptable good practice with in the industry. Due provisions shall be made for the following:

- a.) The location’s suitability for this type of activity.
- b.) The nature of the ground on which foundations are to be built and slides are to cross;
- c.) The foundations for masts, trestles, anchorages, tensioning devices, and driving units must be able to accommodate all conditions of loading, including the required safety factors and to include wind loading;
- d.) The forces applied to the rope with rope loaded, shock-loaded and unloaded
- e.) Forces applied to rope terminations with rope loaded, shock-loaded and unloaded
- f.) Forces applied to anchors and structures with rope loaded, shock-loaded and unloaded
- g.) The mass of each component part
- h.) Correct use and application of all equipment according to manufacturer’s recommendations

4. Requirements for Steel Wire Rope

4.1 Breaking load to maximum working load ratios

The breaking load to maximum working load ratios of ropes shall be at least equal to 5 to 1.

4.2 New Rope

The breaking load of a new rope shall be guaranteed by the manufacturer and the breaking force as obtained by actual test shall be supplied. A rope test certificate must be obtained from the supplier showing the ultimate breaking force in relation to the rope supplied.

4.3 Used Rope

A rope which has been previously in use shall not be installed unless the breaking force of an undamaged part of the specimen cut from the end of the rope has been determined by actual test at an approved testing station and is adequate for the purpose for which the rope is intended. Used rope should ideally not be re-used. However if an undamaged specimen section is tested and found to be of adequate strength then an undamaged section can be re-used.

4.1 Performance Testing

Before commercial operation begins the Activities are to be load tested with 120% of the maximum working load. This is to be carried out under conditions as close as possible to the normal operating conditions.

5. Trees as Anchors

Should trees be used as anchor attachment points for the activities, they are to be inspected and approved fit for purpose by a suitably experienced person or specialist in the field, i.e an arborist, engineer, rigger, etc. Annual inspections are to be carried out on such trees to ensure they remain healthy and structurally sound.

As living trees are organisms that do not conform to any known structural standards and whose long term anchoring and foundation capabilities cannot be guaranteed, people who participate in the activity are to be made aware of and acknowledge such dangers in the form of a signed indemnity or clearly visible disclaimer sign before they begin the activity.

6. Safety Equipment

All safety equipment used to secure and transport people during the activity (including harnesses, pulleys, carabiners, lanyards, quick draws, cow tails) shall be fit for the purpose it is being used and shall carry a national or internationally recognised safety rating standard (such as SABS, CE or similar) acceptable to the adventure and mountain climbing industry.

Harnesses must be of the sit/waist or full body harness type. Chest harnesses are only to be used together and in conjunction with a waist harness as an additional means of ensuring a person remains upright in the waist harness.

7. Operation

7.1 Safety Briefing

A clear and concise safety briefing is to be given to all clients before they proceed on the activity. The safety briefing is to ensure clients are aware of the duration, procedures, requirements, equipment and dangers associated with the activity.

7.2 Cable attachment

When participating in the activity people are at all times to be securely connected with a locking carabiner or similar device between harness and pulley/trolley/cable. Such connections are only to be made with correct safety rated equipment as described in Point 6 above.

7.3 Communication

For guided zipline tours, a clear and adequate form of communication is to be employed between the operators at the start and end of each zipline to ensure the safe and controlled transfer of people along each cable.

7.4 Braking Device

In the case of long or steep zip lines that increase the likelihood and severity of impact injuries to persons travelling along the cables, a suitable braking device is to be put in place to reduce the risk of such impact incidents.

7.5 Guides and Operators

All guides and operators involved with the operation of the activities should receive adequate instruction and be suitably experienced as per acceptable good practice in the adventure tourism industry. Upon completion of the guide training and relevant supervised practical experience on the activity, trainee guides shall be assessed as competent by a suitably qualified person before they are permitted to operate the equipment and take responsibility for client's safety on the activity.

Complete training log records shall be kept for all guides, that includes details of all training and assessments and subsequent safety drills and refresher courses performed.
A person qualified in First Aid is to be available on site at all times.

8. Maintenance

8.1 General

All persons involved with the operation and maintenance of the activities should receive adequate instruction to ensure that they are fully conversant with the equipment concerned.

8.2 Operations manual

The operator shall maintain at least one copy of a standard operating procedures (SOP) manual that contains at least the following information:

- a) a description of the installation, detailing its maximum working load, operating speeds, and safety devices;
- b) detailed operating instructions;
- c) information on maintenance measures (preferably accompanied by a schedule);
- d) risk analysis matrix for the activity
- e) emergency procedures to be followed in the event of an incident or accident.

8.3 Records

A register or log book shall be kept in which the following information is recorded:

- a) name and address of the person in charge of the installation and the name(s) and address(es) of his deputy/deputies;
- b) particulars of the equipment, the dates on which they were installed, the dates on which they were changed, and the reasons for changing them;
- c) dates of maintenance inspections, a report on each inspection, and the signature of the person carrying out the inspection;
- d) details of accidents and near misses, including subsequent investigations and reviews, understanding the causes and improving the SOP accordingly
- e) dates and details of repairs and replacements carried out and adjustments made, and the name and signature of the person responsible for each task.