IRATA International code of practice for industrial rope access

Part 3: Informative annexes

Annex K: Typical method of descending and ascending using IRATA International rope access

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IRATA International
First Floor, Unit 3
Eurogate Business Park
Ashford
Kent
TN24 8XW
England

Tel: +44 (0)1233 754600

Email: info@irata.org

Website: www.irata.org

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Annex K (informative)
Typical method of descending and ascending using IRATA International rope access techniques

Introduction

Annex K gives advice and other information that could be relevant to users of rope access methods and is one of a number of informative annexes in Part 3 of this code of practice. This informative annex should be read in conjunction with other parts of this code of practice, should not be used in isolation and is not intended to be exhaustive. For further advice, readers should refer to relevant specialist publications.

K.1 Pre-use equipment check

K.1.1 All equipment in the rope access system should be checked before use to ensure it is in good condition and functions correctly. Suspect items should be taken out of service.

K.1.2 Before approaching the point of descent or ascent, or commencing to descend or ascend, checks should be made to ensure:

a) harnesses and helmets are correctly fastened and adjusted;

b) lanyards and connectors are correctly fastened;

c) anchors are appropriate and secure;

d) working lines and safety lines are the correct length for the task, are anchored correctly and are free from damage;

e) stopper knots are tied at the lower end of both the working line and the safety line at an appropriate position, with an allowance for stretch;

f) tools or other items are secured so they cannot fall.

NOTE The checks in a) and b) are usually best carried out by a co-worker. This is known as a buddy check.

K.1.3 Additional checks should be made to ensure:

a) anchor lines are rigged so as to avoid being damaged during the work operation;

b) anchor line devices are attached to the anchor lines correctly.

K.2 Use of the back-up device

The back-up device, which is connected to the safety line, is used to protect against falls before, during and after attachment of the rope access technician to the working line. It should be the first item to be attached to the anchor lines, i.e. before ascending or descending devices, and the last item to be removed at the point of egress, i.e. after removing the descending device or ascending devices. The back-up device should be managed at all times in such a way that the potential fall distance is minimized.

K.3 Descending and ascending

NOTE Care should be taken to eliminate any slack in the anchor lines before commencing a descent or ascent. Examples of when slack can occur inadvertently are: if the anchor is positioned some distance from the point of loading; when a rope access technician unloads the working line halfway down a descent; if the working line becomes accidentally snagged between the anchor and point of access.

K.3.1 Method for descending (see Figure K.1)

NOTE Combinations of equipment other than that shown in Figure K.1 may be suitable.

K.3.1.1 Approach the point of descent with care, using an additional fall protection system if necessary, e.g. an anchor lanyard attached to an anchor, taking into account the precautions detailed in **K.1**, **K.2** and the note to **K.3**. Check that all anchor line devices, device lanyards and connectors are attached to the harness correctly and that they function correctly.

K.3.1.2 Place the back-up device on the safety line and:

a) check that the back-up device attachment connector is correctly closed and locked;

b) check for correct attachment and orientation of the back-up device on the safety line (e.g. that it is not upside down);

c) ensure there is no slack in the anchor line above the device (to minimise any potential fall);

d) carry out a function check, e.g. check that the back-up device locks on the anchor line.

K.3.1.3 Adjacent to the point of descent, fit the descending device onto the working line. Prior to beginning the descent, check that it is fitted correctly, e.g. that:

a) the connector used to attach the descending device to the harness is correctly closed and locked;

b) the working line is correctly threaded into the descending device;

c) where present, safety catches are fully closed;

d) the descending device is locked correctly on to the working line.

K.3.1.4 Take a position ready for descent, which may be in tension, e.g. connected to an anchor by an anchor lanyard (not shown in **Figure K.1**), or unsupported, depending on the take-off point. Carry out a function test as follows:

a) with either the back-up device in a high ‘hands off position’ on the safety line or with an anchor lanyard attached to an anchor to provide protection, unlock the descending device while keeping a secure grip on the working line beneath the descending device;

b) carry out a controlled descent of approximately 150 to 200 mm to confirm the descending device is functioning correctly. If an anchor lanyard is used for protection, it should then be removed.

K.3.1.5 Descend carefully and slowly, controlling the speed of descent by means of the descending device, the precise method depending on the type of descending device used. Never lose control of the free end (the tail) of the working line leaving the descending device. Always lock the descending device to the working line during stops in the descent. Where the back-up device is used with a device lanyard, ensure it is managed so that there is minimum slack in the device lanyard.

K.3.1.6 If, during the descent, the descending device is removed and reinstalled on the working line, check the descending device is locked correctly on to the working line and carry out the function test described in **K.3.1.4** before continuing the descent. A function test should be carried out at other times, e.g. after passing an obstruction, if the descending device has been unweighted, when environmental conditions change such as from dry to wet, muddy or icy.

K.3.1.7 When the working position is reached, lock the descending device and position the back-up device as high as possible. Before recommencing the descent, check the descending device is locked correctly on to the working line and carry out the function test described in **K.3.1.4**.

K.3.2 Method for ascending (see Figure K.2)

NOTE Combinations of equipment other than that shown in Figure K.2 may be suitable.

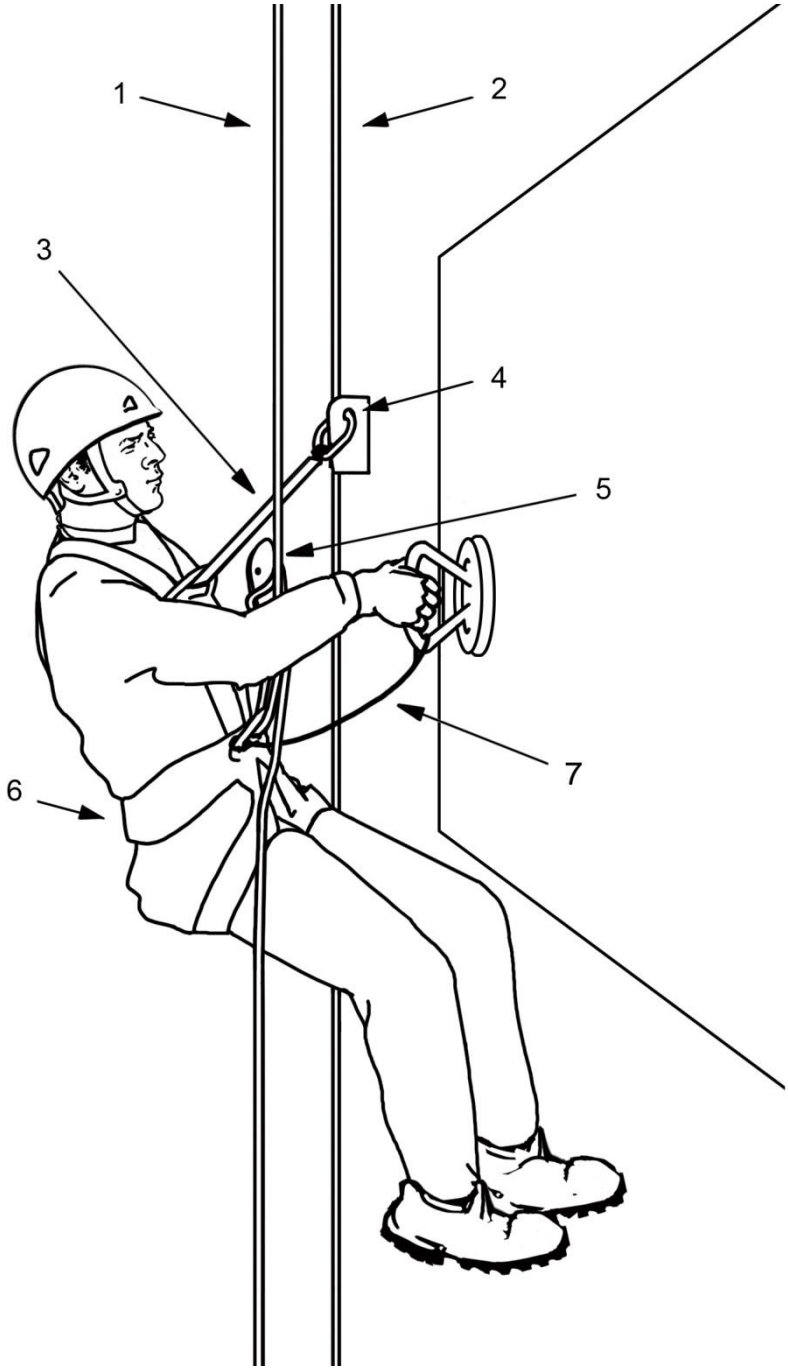
K.3.2.1 Approach the point of ascent with care, using an additional fall protection system if necessary, e.g. an anchor lanyard attached to an anchor, taking into account the precautions detailed in **K.1**, **K.2** and the note to **K.3**. Check that anchor line devices, device lanyards and connectors are attached to the harness correctly and that they function correctly.

K.3.2.2 Place the back-up device on the safety line at shoulder height. Carry out a function test as described in **K.3.1.2**. Fit the other anchor line, i.e. the working line, to the chest ascending device, and take the initial stretch out of it by pulling it down through the chest ascending device. In addition to taking up the stretch, this acts as a function test. Fit the foot ascending device to the working line above the chest ascending device. By standing in the foot loop, pull through any further slack in the working line, passing the slack through the chest ascending device until the working line is as taut as possible.

K.3.2.3 To begin the ascent, load the body weight on to the chest ascending device and lift the foot ascending device to approximately top-of-the-head height. Stand up in the foot loop and pull the resulting slack through the chest ascending device as before. Sit down, so the load is again taken on the chest ascending device, and repeat this process until the ascent is completed.

K.3.2.4 During the ascent, manage the back-up device in such a way that slack is minimized in the device lanyard (where used) and in the safety line. On reaching the top of the climb, attach to a secure anchor or safety system, e.g. by using an anchor lanyard (not shown in **Figure K.2**). Remove the chest ascending device from the working line first, then the foot ascending device. When a safe place has been reached, remove the back-up device.

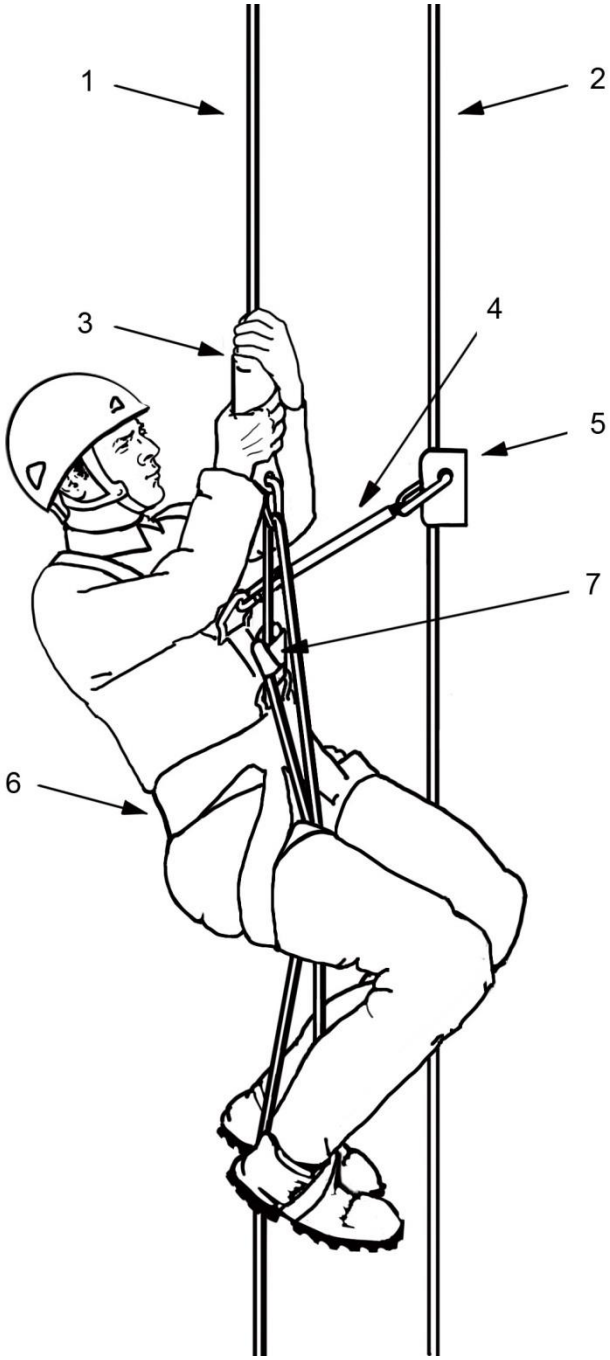
NOTE It is essential that ascending devices are only used in tension on the anchor line and that they are not used in such a way that they could be subjected to a dynamic load, e.g. the force of a fall.



Key

1 Working line
2 Safety line
3 Device lanyard
4 Back-up device
5 Descending device
6 Harness
7 Tool tether

Figure K.1 — Typical method of working in the descent mode in a rope access system (with descending device locked)



Key

1 Working line
2 Safety line
3 Ascending device (with foot loop)
4 Device lanyard
5 Back-up device
6 Harness
7 Ascending device (chest)

Figure K.2 — Typical method of ascending in a rope access system