IRATA International code of practice for industrial rope access

Part 3: Informative annexes

Annex P: Recommended actions for the protection of anchor lines

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1	2013-Sep-01	Front cover: *September 2013* replaces *First edition*. This page: change of IRATA address and telephone number. Date in footer updated. Table P.1, 3b, third column: after *Go to 4,* the words *see next page* have been deleted. All the changes are classed as editorial.

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Annex P (informative)
Recommended actions for the protection of anchor lines

Introduction

Annex P 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.

P.1 General

P.1.1 This informative annex provides a table (**Table P.1**), which takes a hierarchical approach in the recommended order of actions to obtain the best achievable method of protection for anchor lines at a worksite.

P.1.2 Once it has been established that rope access is an appropriate access system and the hazards have been identified (see 1 in **Table P.1**), the lower the number chosen between 2 and 4 in the column titled *Decision* and the corresponding action taken (see the column titled *Action*), the more effective and reliable the protection system is likely to be. This process may be remembered (in English) by the acronym **RAP**:

Remove (the hazard, where feasible)

Avoid (the hazard)

Protect (against the hazard).

P.1.3 Anchor line protection is covered in more detail in **Part 2, 2.7.10**, **2.11.3.1** and **2.11.3.2**. Pre-use checks and inspection are covered in **Part 2, 2.10**.

P.2 Examples of hazards

The following are examples of hazards that should be taken into account when protecting anchor lines. This list is non-exhaustive:

a) sharp edges such as may be found on steel work, cable trays, gratings, glass façades, composite panels;

b) abrasive edges and surfaces such as coping stones, rock protrusions, corroded structures;

c) trapping and cutting areas such as manhole covers, hatches, doorways;

d) heat sources and the risk of melting from such as hot pipes, exhaust gases, lighting;

e) hot work such as welding or cutting;

f) corrosive substances such as chemical deposits or spillages;

g) tools such as angle grinders, chainsaws, ultra-high-pressure lances, grit blasters, power drills.

Table P.1 — Hierarchy for the protection of anchor lines against hazardous surfaces

Decision		**Action** *(Assumes it has been established that rope access is a suitable method of work)*
1. Hazard identification Have all the hazards in the planned anchor line path been identified and is it possible to rig anchor lines away from any hazard or to protect them against those hazards?	**Yes** ➡	Identify all hazards in the path of the anchor line for its entire length and taking into account the duration of the rope access task. Include any potential rescue scenario. Allow for any potential vertical and transverse movement of the working line and safety line either while under load, e.g. during working or rescue operations, or when not under load, e.g. due to the effects of vibration or wind. Consider the consequences of working line failure, e.g. deployment of the back-up device; stretch of the safety line; anchor lines moving over an edge in a set-up rigged for rescue. **Go to 2**
	No ➡	Use another access method. **Go to 6**
2. Remove the hazard Can the edge/other hazards be eliminated?	**Yes** ➡	Where feasible, remove the hazard, e.g. remove grating; remove sharp or abrasive surfaces; ensure any heat sources are isolated. **Go to 5**
	No ➡	**Go to 3a**
3a. Avoid the hazard Can the anchor lines be rigged so they hang completely free and clear of the hazards (i.e. without the use of re-anchors or deviations)?	**Yes** ➡	Rig anchor lines (e.g. using Y-hangs) so that they hang free and clear of the hazard(s) for their entire length and for the duration of the rope access task. Consider, as an additional safety measure, the appropriateness of protecting against the hazards that have already been avoided by the free hang, e.g. by placing a fire blanket over any hot pipes in the vicinity of the anchor lines. **Go to 5**
	No ➡	**Go to 3b**
3b Avoid the hazard Can the hazard be avoided by a method other than a completely free hang? *3b continues on next page.*	**Yes** ➡	Examples of this type of hazard avoidance (in order of preference) are: smooth-surfaced scaffolding tube clamped in position over which the anchor lines run; deviations of suitable strength connected independently to the working line and the safety line; anchor lines re-anchored. If re-anchors are used, ensure the anchor lines are not exposed to the hazard at any time, e.g. by placing edge or anchor line protection (**see 4**). **Go to 5**

3b continued	**No** ➡	**Go to 4**
4. Protect against the hazard If the hazard, e.g. edges; abrasive surfaces; heat sources, cannot be avoided, can effective protection appropriate for the task be installed?	**Yes** ➡	Carry out a thorough assessment of the hazards to define the level of robustness of protection required, e.g. whether edge protectors and/or anchor line protectors are appropriate and which type should be used. Install protection based on whether it is an edge to be protected against or an abrasive, smooth, or hot surface or heat source and whether the contact angle is small or large. Select types of protection which have been demonstrated to control the particular type of hazard. Ensure edge protectors, anchor line protectors and anchor lines stay in their intended position. Protectors that do not enclose the anchor line are easier to pass and to observe damage than wrap-around sheath types, particularly at a top edge. Where individual enclosed anchor line protectors are to be used, each anchor line should be independently protected. **Go to 5**
	No ➡	**Go to 6**
5. Final verification Is the level of protection robust enough to reduce the chance of damage to the working line to an acceptable level and also ensure safety line integrity will remain uncompromised in the event of a working line failure?	**Yes** ➡	Define the method chosen, including implementation within the rescue plan. Verify as outlined in the first column on the left (beneath the heading *Final verification*). Start work only after a pre-use check for system integrity and recheck regularly.
	No ➡	**Go to 6**
6. DO NOT PROCEED		