



**IRATA International code of practice
for industrial rope access**

Part 3: Informative annexes

Annex A: Risk assessment

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Annex A (informative)

Risk assessment

Introduction

Annex A 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.

A.1 General

A.1.1 This informative annex is intended to assist rope access companies in their duty to carry out appropriate risk assessments. Risk assessment is also known by other names, e.g. job safety analysis, but for simplicity is referred to throughout this annex as risk assessment.

A.1.2 A risk assessment is a careful, systematic examination of the hazards in the place of work that could cause harm to people or damage to plant or property. It should be done before the work takes place and before the work and rope access equipment are selected.

A.1.3 For clarification:

- a hazard is something that has the potential to cause harm to any person, property or animal;
- a risk is the likelihood of that harm actually occurring.

A.1.4 It is important, when carrying out a risk assessment, to identify the significant hazards, evaluate the level of associated risk and indicate whether existing and/or proposed precautions are suitable to eliminate or minimize the risk.

A.1.5 Any judgement of the risk should take account of the total number of persons who could be harmed and the severity of that harm, should it occur.

A.2 Carrying out a risk assessment

A.2.1 A satisfactory risk assessment can be achieved by carrying out the steps given in **A.2.1.1** to **A.2.1.5**.

A.2.1.1 Identify the hazards in the work place

- a) The area in which the rope access team is expected to operate should be checked and any hazards that could reasonably be expected to cause harm to the rope access team members should be identified.
- b) Any action that might be taken during the work that could create a hazard with the potential to cause harm to others should be identified. Hazards that could result in major harm or affect several people should be prioritised.
- c) The effect of persons being in the vicinity of the rope access operations who are not part of the rope access team should be assessed with regard to the rope access team members' safety.

A.2.1.2 Identify who could be harmed and how

Team members and any others who are at risk from each hazard should be identified.

A.2.1.3 Evaluate the risks and decide on precautions

A.2.1.3.1 There is more than one way of evaluating the level of risk arising from each hazard. One method uses a risk matrix. **Table A.1**, which is one example of a risk matrix, sets out numerically the likelihood of an incident occurring and the potential severity or consequences of such an incident. The level of risk is a multiplication of the likelihood of an incident occurring and the severity or consequences of it. The risk value and residual risk value after the controls have been put into place are shown in the few examples given in **Table A.3**.

A.2.1.3.2 The risk matrix is developed by using the simple formula:

risk = likelihood x severity

where, in the examples shown in **Table A.1** and **Table A.3**, the ***likelihood*** of an accident occurring has the values:

1. Highly unlikely to occur
2. Possibility remote but has occurred
3. Very infrequently
4. Occasionally
5. Frequently and regularly

and the ***severity*** of the consequences has the values:

1. Minor injury, no time off work
2. Injury resulting in up to three days off work
3. Injury resulting in more than three days off work
4. Major disabling injury (e.g. loss of a limb or an eye)
5. Fatality

A.2.1.3.3 Multiplying the numbers together (e.g. 2 from the ***likelihood*** list times 4 from the ***severity*** list equals 8) produces a risk rating called a ***risk value*** (see **Table A.1**), which can be categorized as follows:

High (critical risks): 15 to 25;

Medium (significant risks): 8 to 12;

Low (minor risks): 1 to 6.

A.2.1.3.4 Different actions need to be taken depending on the risk value calculated. Examples of recommendations for actions to be taken in line with the risk value results obtained in **Table A.1** (high, medium or low) are given in **Table A.2**.

A.2.1.3.5 While the risk matrix method is popular, it can be highly subjective, with the potential for questionable results. Consequently, if a satisfactory risk assessment is to be achieved when using this method, very careful thought has to be given when deciding on the likelihood and severity values.

A.2.1.3.6 Another method of evaluating the risks, which does not use a risk matrix, asks a series of questions to which the person carrying out the risk assessment provides answers. This method is preferred by the authorities and others as it is arguably less subjective than the risk matrix method.

Table A.4 provides an example, which is adapted from one provided by the UK Health and Safety Executive (HSE) in their guidance literature.

A.2.1.3.7 If further precautions are necessary, each hazard should be examined and the following hierarchy of control measures applied, where 1 is the best option and 6 is the option of last resort.

1. Remove the hazard completely.
2. Try a less hazardous option.
3. Prevent access to the hazard.
4. Organize work to reduce exposure to the hazard.
5. Increase the level of information, training and supervision.
6. Use personal protective equipment.

A.2.1.4 Record the findings, implement them and inform team members and others

A.2.1.4.1 The findings of the risk assessment and the method to be adopted to eliminate the hazard, control it or reduce it to an acceptable level of risk should be documented. The results of the risk assessment should be communicated to all team members.

A.2.1.4.2 Team members should understand and comply with the contents of the risk assessment and the measures put in place to reduce the level of risk.

A.2.1.4.3 Other people in or around the rope access work-site should be informed about any risks that the rope access work could cause them and what precautions are being taken.

A.2.1.4.4 Significant findings from the risk assessment should be recorded. A record should also be kept if the activity is considered to involve a high level of risk, which includes most rope access activities. The recording of this information may be a statutory requirement.

A.2.1.4.5 A risk assessment should include:

- a) a statement of the significant hazards identified;
- b) the control measures in place and the extent to which they control the risks, and the options and methods available for workmate rescue (cross-referenced to other documents);
- c) the persons exposed to the risks.

A.2.1.4.6 The risk assessment should be kept for future reference. It could be useful should these precautions be questioned or if there is any action for civil liability. It is also a reminder to address safety matters and could help to show compliance with the law.

A.2.1.5 Review the risk assessment and revise it when necessary

The risk assessment should be reviewed at regular intervals and revised when the situation changes (this might be a statutory requirement), e.g.

- a) hazards may change in the same environment over time;
- b) new equipment, procedures or materials may cause new hazards;
- c) changing working environments may introduce significant new hazards of their own. These should be considered in their own right and then whatever is necessary should be done to keep the level of risk low;

d) young or inexperienced workers joining the team may require further actions to be taken.

A.2.2 Tables A.1 and A.2 are intended to be examples only. Different tables, headings and values might be appropriate for some businesses. Tables A.3 and A.4 are intended only to help the reader think through some of the hazards in their organization and the steps needed to take control of the risks. Neither table is intended to be a generic risk assessment that can be adopted without any thought. Every business is different and so each one should think through for themselves the hazards and controls required.

Table A.1 — Example of a risk matrix

		Severity				
		1	2	3	4	5
Likelihood	1	1 LOW	2 LOW	3 LOW	4 LOW	5 LOW
	2	2 LOW	4 LOW	6 LOW	8 MEDIUM	10 MEDIUM
	3	3 LOW	6 LOW	9 MEDIUM	12 MEDIUM	15 HIGH
	4	4 LOW	8 MEDIUM	12 MEDIUM	16 HIGH	20 HIGH
	5	5 LOW	10 MEDIUM	15 HIGH	20 HIGH	25 HIGH

Key

Likelihood

- 1 Highly unlikely to occur
- 2 Possibility remote but has occurred
- 3 Very infrequently
- 4 Occasionally
- 5 Frequently and regularly

Severity

- 1 Minor injury, no time off work
- 2 Injury resulting in up to three days off work
- 3 Injury resulting in more than three days off work
- 4 Major disabling injury (e.g. loss of a limb or an eye)
- 5 Fatality

Table A.2 — Example of recommendations for action following results in Table A.1

Risk value result in Table 1	Recommended action
Low (1 to 6)	May be acceptable; however, review the task to see if the risk can be reduced further.
Medium (8 to 12)	Where possible, the task should be redefined to take account of the hazards involved or the risk should be reduced further, prior to task commencement. Appropriate management authorisation after consultation with specialist personnel and an assessment team may be required.
High (15 to 25)	Unacceptable. The task should be redefined or further control measures put in place to reduce the risk. The controls should be re-assessed for adequacy, prior to start of task.

Table A.3 — Example of a risk assessment using risk value and residual risk numerical values (via a risk matrix)

NOTE Table A.3 provides a few examples only and is not exhaustive.

ACTIVITY/HAZARD Use procedure as a guide	HAZARD EFFECT Type of injury/damage/environmental impact	PEOPLE AT RISK	RISK VALUE Refer to procedure	CONTROL MEASURES Existing and proposed	RESIDUAL RISK
<i>Here is where you enter the type of hazard that might be encountered while carrying out the task, e.g. Manual handling.</i>	<i>How people at risk might be harmed – this is where you list the <u>actual harm</u> which could result whilst carrying out the task, e.g. injury or back pain from lifting awkward items or weights.</i>	<i>Who might be harmed, e.g. A: Rope access worker; B: the public; C: other trades people.</i>	<i>This means the likelihood of harm and the potential severity of the harm occurring: see Tables A.1 and A.2</i>	<p><i>Once the risks have been assessed, precautions are required to be put in place in order to avoid ‘people at risk’ being harmed and this is where you would list such precautions, e.g.</i></p> <ul style="list-style-type: none"> • Staff to attend mandatory manual handling training session • Use ‘safe lifting’ manual handling techniques at all times 	<i>See Tables A.1 and A.2</i>
Working at height using rope access or work positioning techniques, fall of personnel	Fatality, serious injury	A	3 x 5 = 15 high	Deployment of twin rope access system as per written procedure (<i>give reference</i>) and current IRATA code of practice. Use of certified equipment, competent personnel. Equipment to be stored in secure area when not in use.	1 x 5 = 5 low
Moving or lifting a load	Manual handling, muscular-skeletal injuries	A	3 x 3 = 9 medium	Clear instructions to be given at tool box talks, planned lifts, Personnel to perform warm-up exercises before undertaking any strenuous activity.	3 x 2 = 6 low
Adverse weather	Hypothermia, heat exhaustion	A	3 x 5 = 15 high	Work suspended at discretion of team leader in consultation with authorities. Work not to begin in deteriorating conditions. Wind chill factor to be considered when working in exposed locations. In hot locations ensure fluid intake by personnel is adequate and appropriate eye/skin protection is used.	1 x 5 = 5 low
Potential exposure to radio waves when working on transmitting aerials for mobile phones	General feeling of being unwell: headaches, nausea, sunstroke type symptoms, dehydration, possibly vision impairment	A and C	4 x 3 = 12 medium	Transmission isolation, exclusion zones, use of personal monitor; permit to work system, radio frequency awareness training.	2 x 2 = 4 low

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ACTIVITY/HAZARD Use procedure as a guide	HAZARD EFFECT Type of injury/damage/environmental impact	PEOPLE AT RISK	RISK VALUE Refer to procedure	CONTROL MEASURES Existing and proposed	RESIDUAL RISK
Working at height, dropped objects	Impact injuries, damage to equipment	A, B and C	4 x 3 = 12 medium	Work in accordance with the written procedure (<i>give reference</i>), tools and equipment secured by lanyard, secured haul sacs to be used, heavy items to be independently secured. Competent personnel. Vulnerable areas to be barriered. Third parties to be kept clear (Permit to work Tannoy announcement).	1 x 3 = low
Use of tools	Dropped objects. Fatality or injury to personnel or damage to asset. Dropped objects relating to equipment or couplant	A, B and C	3 x 5 = 15 high	Set secured on ropes/bridle. Probes kept in tool bag until required. Area below work site barriered, if appropriate. No work above or below work party. Area below work site to be barriered. No work above or below work party. All tools on lanyards.	1 x 5 = 5 low
Non-destructive testing	Control of substances hazardous to health related issues due to couplants, inks, and paints. Potential health related issues	A	4 x 5 = 20 high	Follow manufacturer's material safety sheets and assess accordingly. Correct personal protective equipment. Good hygiene.	1 x 5 = 5 low
Grit blasting, spraying, painting	Cutting through rope causing fall, serious injury/fatality	A	4 x 5 = 20 high	Personnel trained and competent in using this technique when suspended. Work instructions to be adhered to at all times. Back up hard line attachment for personnel out of range of blasting nozzle. Use of rope protectors on exposed locations. Standby personnel to perform emergency shut downs and test before use. Recovery system to be in place.	1 x 5 = 5 low
Grit blasting, spraying, painting	Technician blasts himself, grit injection, paint injection, severe abrasions, personal injury	A	4 x 3 = 12 medium	Personnel trained and competent in using this technique when suspended. Dead man's lever to be tested operational before blasting commences. Recovery system in place. Suitable personal protective equipment to be worn. Care to be taken that personal protective equipment does not impair operation of rope access equipment.	1 x 3 = 3 low

Table A.4 — Example of a risk assessment that does not use a risk matrix

Company name: TVW Contract Bricklayers			Date of risk assessment: 06 March 2010			
What are the hazards?	Who might be harmed and how?	What are you already doing?	What further action is necessary?	Action by whom?	Action by when?	Date carried out
Falling from a height	Serious injury or even fatal injury could occur if a worker falls.	<ul style="list-style-type: none"> • Agree scaffolding requirements at contract stage, including appropriate load rating and provision of loading bays. • Bricklayers' supervisor to check with site manager that the correct scaffold is provided and inspected. • Workers instructed not to interfere with or misuse scaffold. Supervisor to keep an eye out for problems. • Ladders in good condition, adequately secured (lashed) and placed on a firm surface. • Band stands with handrails to be used for work on internal walls. • Workers trained to erect bandstands. 	<ul style="list-style-type: none"> • Scaffold requirements agreed, including loading bays and appropriate load rating. 	DT	20.03.10	19.03.10
			<ul style="list-style-type: none"> • Supervisor to speak regularly to site manager to arrange scaffold alterations and ensure that weekly inspections have been carried out. 	CR	From 01.05.10	
Collapse of scaffold	All operatives on scaffold may incur crush injuries, or worse, if the scaffold collapses on top of them.	<ul style="list-style-type: none"> • Agree scaffolding requirements at contract stage, including appropriate load rating and provision of loading bays. • Bricklayers' supervisor to check with the site manager that the correct scaffold is provided and inspected. 	<ul style="list-style-type: none"> • Supervisor to keep a check to make sure that the scaffold is not overloaded with materials. 	CR	From 01.05.10	
Falling objects hitting head or body, including feet	Serious head and other injuries to workers, others on site and members of the public.	<ul style="list-style-type: none"> • Brick guards kept in position on scaffold lifts. • Waste materials removed from scaffolding and placed in skip. • Safety helmets and protective footwear (with steel toecaps and mid-soles) supplied and worn at all times 	<ul style="list-style-type: none"> • Supervisor to monitor use of safety hats and protective footwear. 	CR	From 01.05.10	