RISK ASSESSMENT GUIDELINES

Society of Professional Rope Access Technicians
994 Old Eagle School Road, Suite 1019
Wayne, PA 19087 USA
sprat.org
info@sprat.org

Version 25A Board approved January 2025
ISC-01

Registry Number:
ISC-01

Revision History:
Version 25A Board approved January 2025

Table of Contents:

Notes for Use:

Terminology from SPRAT's *Defined Terms* used in this document is shown in ***bold***, ***italic*** type unless written in a primary section heading.

Use of the word 'shall' denotes a mandatory requirement.

Use of the word 'should' denotes a recommendation. The word 'should' does not connote indifference or ambivalence regarding a statement.

Approximate conversions of units are presented in parentheses. These approximations are provided as a reference and are not the standard. When a value is presented as a limit, approximations are greater than an expressed minimum or less than an expressed maximum.

Visit https://sprat.org for the most recent standards versions, supporting documentation, and news.

1. Purpose, Scope, Exceptions

1.1. Purpose

1.1.1. The purpose of this document is to provide a resource to assist in conducting risk assessments for rope access and other work-at-height.

1.1.2. This document is intended to assist with risk assessment during:

1.1.2.1. Development of an ***access work plan*** in accordance with SPRAT's *Safe Practices for Rope Access Work*.

1.1.2.2. Review of the ***access work plan*****.**

1.1.2.3. Completion of rope access work and other work-at-height.

1.2. Scope

1.2.1. This document provides:

1.2.1.1. A description of hazards, risks, and contributing factors.

1.2.1.2. Types of control measures and selection considerations.

1.2.1.3. A non-exhaustive list of hazards, associated contributors to risk, and potential control measures.

1.2.2. This document is written for all persons involved with rope access work and other work-at-height, including clients, ***employers*****,** ***rope access technicians***, and regulatory authorities.

1.3. Exceptions

1.3.1. This document is a prompt, not a substitute for an individualized risk assessment for a particular work scope.

1.3.2. This document cannot provide all potential hazards, contributors to risk, or controls.

1.3.3. This document cannot ensure that provided controls will effectively address hazards and contributors to risk.

2. Risk Assessment Principles

2.1. Risk assessment consists of the following steps:

2.1.1. Identifying hazards.

2.1.2. Considering contributors to risk.

2.1.3. Selecting and implementing controls.

2.1.4. Monitoring risk.

2.2. Identifying Hazards

2.2.1. A hazard is a situation with the potential to cause harm to someone or something.

2.2.2. A hazard may result from the work method or work environment.

2.2.3. A hazard is a source of risk.

2.3. Considering Contributors to Risk

2.3.1. Risk is the possibility of harm resulting from exposure to a hazard.

2.3.2. The level of risk is determined by considering contributors to risk, including:

2.3.2.1. Frequency and duration of exposure.

2.3.2.2. Potential consequences.

2.3.2.3. Severity of consequences.

2.3.2.4. Likelihood of consequences.

2.4. Selecting and Implementing Controls

2.4.1. A control is a measure taken to reduce the risk level associated with a hazard.

2.4.2. Controls should be selected and implemented to eliminate a hazard or its associated contributors to risk.

2.4.3. If a hazard cannot be eliminated, controls should be selected and implemented to reduce the level of risk.

2.4.3.1. Multiple controls may be required to effectively reduce risk to an acceptable level.

2.4.4. A control may be one or a combination of the following:

2.4.4.1. A group control, which provide a collective physical protection against a hazard or risk.

2.4.4.1.1. Examples of group controls include guardrails and safety nets.

2.4.4.2. An individual control, which provide physical protection against a hazard or risk to one person.

2.4.4.2.1. Examples of individual controls include ***backup systems*** and eye protection.

2.4.4.3. A procedural control, which include work practices to warn of or limit exposure to a hazard or risk.

2.4.4.3.1. Examples of procedural controls include warning signs and specialized work instructions.

2.4.5. Selection and implementation of a control should consider, at a minimum:

2.4.5.1. A control's effectiveness in addressing factors that affect the level of risk.

2.4.5.2. The number of affected persons.

2.4.5.3. The required training to ensure control effectiveness.

2.4.5.4. Additional hazards or risk associated with establishing a control.

2.4.5.5. The potential for prompt rescue.

2.5. Monitoring Risk.

2.5.1. The work method and work environment should be constantly monitored to ensure that:

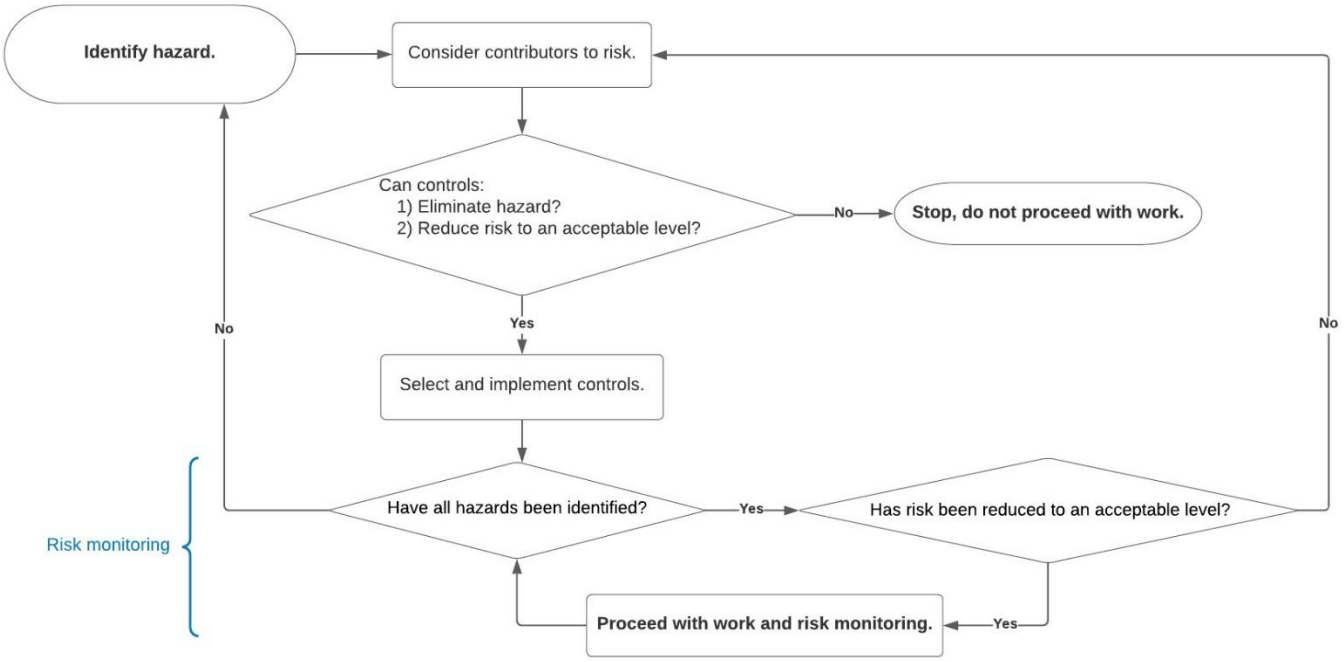
2.5.1.1. Selected and implemented controls remain effective.

2.5.1.2. New hazards are identified, with additional controls selected and implemented, as necessary.

2.5.2. No work shall proceed when selected and implemented controls do not reduce risk to an acceptable level.

2.5.3. An illustration of the risk assessment process is presented in Figure 1**.**

FIGURE 1 RISK ASSESSMENT FLOWCHART



3. Risk Assessment Reference

3.1. Introduction

3.1.1. The following tables have been developed to provide a prompt to assist risk assessment for rope access work and other work-at-height.

3.1.2. The tables consist of a non-exhaustive list of potential:

3.1.2.1. Hazards due to the work method and work environment.

3.1.2.2. Contributors to risk associated with each hazard.

3.1.2.3. Controls to minimize risk associated with each potential hazard.

3.1.3. Contents of each table are considerations and may not be applicable to specific work methods or work environments.

3.2. Work-at-height

Potential Hazard	Contributors to Risk	Controls to Minimize Risk
Access Method	Routes to reach work location. Required ***fall protection systems***. Required transitions between ***fall protection systems***. Limited access or egress.	Identify, mark, and maintain ***fall zones***. Select and use ***fall protection systems*** to minimize ***free fall potential*** and potential ***swing fall***: • Guardrails, safety nets. • ***Travel restraint systems***. • ***Rope access systems***. • Other ***fall arrest systems*** and ***positioning systems***. Ensure sufficient clearance. Identify transitions between ***fall protection systems***. Ensure provision of appropriate training. Ensure pre-use inspection of equipment. Determine access and egress time requirements. Ensure provision for prompt rescue. Consider ***remote rescue systems***.
Anchorage Systems	Suitability of ***anchorage***s and ***anchorage systems*** for intended use.	Calculate ***anchorage system*** requirements. Select and use ***anchorage systems*** to minimize ***free fall potential*** and potential ***swing fall***. Use available certified ***anchorages***. Test ***anchorage systems***. Restrict access to ***anchorage***s.
Rope Systems	Contact with surfaces. Elongation and clearance requirements.	See surfaces. Consider intermediate, ***fixed anchorage systems*** and intermediate stabilization. Consider dual ***main systems***.

3.3. Human Factors

Hazard	Contributors to Risk	Controls to Minimize Risk
Adjacent Work	Concurrent operations that may affect work method or work environment.	Review ***access work plan*** with adjacent work teams. Identify, mark, and maintain ***fall*** and ***hazard zones***. Restrict or coordinate simultaneous operations with adjacent work teams.
Communication Difficulty	Ambient noise from work processes or work environment. Failure of communication system. Miscommunication.	Establish multiple methods of communication. Review and verify communication methods, including signals.
Public	Interactions with public that may affect work method or work environment.	Identify, mark, and maintain ***fall*** and ***hazard zones***. Use personnel to restrict access to ***fall*** and ***hazard zones***.
Vehicles	Traffic or other moving vehicles in or near work environment.	Identify, mark, and maintain ***hazard zones***. Use of personnel or vehicles to maintain barrier. High visibility clothing for personnel.
Work Team	Communication difficulty. Human error.	See communication difficulty. Review ***access work plan***. Ensure appropriate training. Ensure appropriate supervision. Verify ***rope access systems*** before use.

3.4. Tools, Work Equipment, and Materials

Hazard	Contributors to Risk	Controls to Minimize Risk
Chemicals	Risk dependent on nature of chemicals and route of exposure. Refer to safety data sheet (SDS).	Reference and adherence to safety data sheet (SDS). Use secondary containment. Minimize exposure. Ensure compatibility of ***rope systems*** with work method. Protect ***rope systems***. Use appropriate protective equipment. Ensure materials for spills are available. Ensure appropriate disposal.
Tools	Dropped items. Harm to personnel, equipment, and property. Tool byproducts.	Ensure compatibility of ***rope systems*** with work method. Consider separate ***rope systems*** for tools and materials Ensure appropriate training. Use tool tethers. Use appropriate protective equipment.
Fasteners	Dropped items. Harm to personnel, equipment, and property.	Consider closed containers and magnetic trays.
Suspended Loads	Dropped items. Harm to personnel, equipment, and property.	Identify, mark, and maintain ***hazard zones***. Consider separate ***rope systems***, including ***backup system***.

3.5. Physical Conditions

Hazard	Contributors to Risk	Controls to Minimize Risk
Animals	Animal bites or stings. Exposure to animals or animal waste.	Modify work method to minimize exposure. Consider allergenic effects. Consider barricades. Use appropriate protective equipment.
Confined Space	Limited access or egress. Hazardous ambient conditions. Contact with surfaces.	See access method; consider ***remote rescue systems***. See ambient conditions. See surfaces.
Energy Sources	Potential energy source: • Electrical. • Thermal. • Machinery. • Radiation, such as: - Microwave (radiofrequency). - Ultraviolet (UV). - X-Ray.	Isolate, de-energize, lockout, and tagout hazardous energy sources. Use appropriate protective equipment.
Surfaces	Surface types include: • Abrasive surfaces. • Hot surfaces. • Sharp surfaces or edges. • Slippery surfaces. • Loose materials.	Consider ***rope systems*** to avoid surfaces (e.g., ***deviations*** or ***re-anchors***). Minimize movement of ***rope systems*** near surfaces. Use rope or edge protection. Consider separate protection for individual ***rope systems***. Use appropriate protective equipment.
Water	Limited access or egress. Exacerbated ambient conditions.	Consider ***remote rescue systems***. Consider availability of support boat. Consider availability of personal flotation devices.

3.6. Ambient Conditions

Hazard	Contributors to Risk	Controls to Minimize Risk
Air Quality	Potential atmospheric conditions: • Flammable. • Explosive. • Low-oxygen. • Noxious.	Use appropriate air monitor. Consider forced ventilation. Use appropriate protective equipment.
Temperature	Heat illnesses. Hypothermia. Effects on surfaces. Effects on equipment, tools.	Wear appropriate clothing. Use appropriate protective equipment. Ensure regular rest breaks. Consider ventilation, heating, or cooling.
Light	Restricted visibility of surfaces, access methods, tools.	Provide additional lighting as needed. Consider backup lighting. Consider options to block or limit light.
Lightning	Potential electrocution. ***Rope systems*** may conduct electricity.	Establish lightning distance limits appropriate to work method and work environment. Monitor and communicate weather conditions. Ensure sufficient egress time.
Noise	Communication difficulty. Harm to personnel.	See communication difficulty. Minimize exposure. Use appropriate protective equipment.
Precipitation	Effects on surfaces. Effects on equipment, tools. Exacerbated temperature effects.	Minimize exposure. Use appropriate protective equipment. Consider effects on equipment and access method.
Wind	Communication difficulty. Effects on ***rope systems***. Exacerbated temperature effects.	See communication difficulty. Establish wind limits appropriate to work method and work environment. Provide intermediate stabilization for ***rope systems***. Assign personnel to manage ropes.