

# ROPE ACCESS EVALUATION GUIDELINES



Society of Professional Rope Access Technicians

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**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.

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## 1. Purpose and Scope

### 1.1. Purpose

- 1.1.1. The purpose of this document is to provide current and prospective **rope access technicians, competent trainers**, Evaluation Session Hosts, and evaluators with the information and resources requisite in conducting impartial, consistent, and efficient rope access evaluations.
- 1.1.2. This document serves as a supplement to SPRAT's *Rope Access Certification Requirements* and is to be used in conjunction with SPRAT's *Safe Practices for Rope Access Work* and SPRAT's *Defined Terms*.

### 1.2. Scope

- 1.2.1. The document provides:
  - 1.2.1.1. Responsibilities of involved parties.
  - 1.2.1.2. Written test information.
  - 1.2.1.3. Rope access evaluation policies.
  - 1.2.1.4. Certification requirement perspectives, performance expectations, and training considerations.
  - 1.2.1.5. Direct Entry program policies.
  - 1.2.1.6. Site, site station, and equipment requirements and recommendations.

## 2. Responsibilities of Involved Parties

### 2.1. Candidate Responsibilities

- 2.1.1. Prior to participating in a rope access evaluation, a candidate shall:
  - 2.1.1.1. Provide proof of identification and age.
  - 2.1.1.2. Ensure their personal information is accurate in their accounts in SPRAT's system.
    - 2.1.1.2.1. Candidate accounts are created when a candidate is first added to a roster.
    - 2.1.1.2.2. SPRAT's [Account Issue Report Form](#) should be completed before the rope access evaluation to assist in updating personal information that is not editable within a candidate's account.
  - 2.1.1.3. Receive training in accordance with *Rope Access Certification Requirements*.
  - 2.1.1.4. Select their certification testing level.
  - 2.1.1.5. Complete written test requirements in accordance with Section 3.
  - 2.1.1.6. Provide documentation verifying eligibility for their testing level in accordance with Section 4.2.
  - 2.1.1.7. Complete the Candidate Affidavit.
- 2.1.2. During a rope access evaluation, a candidate shall:
  - 2.1.2.1. Conduct themselves in a professional manner.
  - 2.1.2.2. Complete requirements while adhering to performance principles in Section 4 of *Rope Access Certification Requirements*.
  - 2.1.2.3. Ask questions, as needed, to clarify an evaluator's instructions.
- 2.1.3. Following a rope access evaluation:
  - 2.1.3.1. Candidates should provide feedback regarding the rope access evaluation to the SPRAT Office.
  - 2.1.3.2. Candidates that do not pass the written test or rope access evaluation should retest in accordance with Sections 3 and 4, respectively.
  - 2.1.3.3. Candidates should ensure their personal information remains current within SPRAT's system.
  - 2.1.3.4. Successful candidates should maintain their certification.

## 2.2. Evaluation Session Host Responsibilities

### 2.2.1. Prior to hosting a rope access evaluation, an Evaluation Session Host shall:

- 2.2.1.1. Maintain a Company or Company Premier membership with SPRAT.
- 2.2.1.2. Ensure a Host Agreement for the current calendar year is submitted and approved in SPRAT's system.
- 2.2.1.3. Ensure insurance documentation is submitted and approved in SPRAT's system in accordance with SPRAT's *Evaluation Session Insurance Policy*.
- 2.2.1.4. Provide or ensure provision of a site meeting the requirements of Sections 10, 11, and 12.
- 2.2.1.5. Establish an evaluation and assign an evaluator in SPRAT's system.
- 2.2.1.6. Schedule an evaluator to conduct the rope access evaluation.
- 2.2.1.7. Ensure accommodation in a rope access evaluation for all candidates in accordance with Section 4.
- 2.2.1.8. Ensure candidates meet eligibility and training requirements of Section 3 of *Rope Access Certification Requirements*.
- 2.2.1.9. Submit or ensure the submittal of and verify the approval of Direct Entry applications.
- 2.2.1.10. Complete the evaluation roster in SPRAT's system, including:
  - 2.2.1.10.1. Adding candidates with existing accounts.
  - 2.2.1.10.2. Entering personal information for new candidates.
  - 2.2.1.10.3. Taking and entering current photos of candidates.
    - 2.2.1.10.3.1. Photographs shall be passport style headshots with a neutral background.
    - 2.2.1.10.3.2. Photographs of candidates wearing hats or sunglasses are not accepted.
- 2.2.1.11. Verify that candidates have accessed and verified their personal information in SPRAT's system.

### 2.2.2. During a rope access evaluation, an Evaluation Session Host shall:

- 2.2.2.1. Provide or ensure provision for prompt rescue.

### 2.2.3. Following a rope access evaluation, Evaluation Session Hosts shall:

- 2.2.3.1. Provide feedback regarding the rope access evaluation to the SPRAT Office.
- 2.2.3.2. Assist with the submittal and investigation of complaints and appeals.
- 2.2.3.3. Provide payment of rope access evaluation fees in a timely manner.
  - 2.2.3.3.1. A fee of \$100 is assessed for each candidate.

## 2.3. Evaluator Responsibilities

### 2.3.1. Prior to administering a rope access evaluation, an evaluator shall:

- 2.3.1.1. Maintain an evaluator appointment in accordance with approved procedures.
- 2.3.1.2. Ensure their independence from all candidates.
- 2.3.1.3. Inform the SPRAT Office and Evaluations Committee of any potential conflicts of interest.
- 2.3.1.4. Ensure Evaluation Session Hosts and candidates meet applicable eligibility requirements.
- 2.3.1.5. Verify site requirements.
- 2.3.1.6. Verify and supplement evaluation roster information in SPRAT's system.

- 2.3.2. During the rope access evaluation, an evaluator shall:
  - 2.3.2.1. Administer the rope access evaluation in accordance with approved procedures.
  - 2.3.2.2. Observe candidates' adherence to performance principles while completing certification requirements.
  - 2.3.2.3. Issue grades and explain results to candidates and Evaluation Session Hosts.
- 2.3.3. Following a rope access evaluation, an evaluator shall:
  - 2.3.3.1. Submit rope access evaluation documentation to the SPRAT Office.
  - 2.3.3.2. Assist with the investigation of complaints and appeals from a rope access evaluation.
- 2.4. SPRAT Office Responsibilities
  - 2.4.1. The SPRAT Office shall:
    - 2.4.1.1. Assist with general certification program enquiries.
    - 2.4.1.2. Review, approve, and manage Evaluation Session Host information.
    - 2.4.1.3. Manage administration of the Direct Entry program.
    - 2.4.1.4. Compile and store rope access evaluation and written test information.
    - 2.4.1.5. Collect and manage fees associated with certification processing.
    - 2.4.1.6. Process certification documentation for all successful candidates.
    - 2.4.1.7. Manage verification of current and expired SPRAT certifications.

### 3. Written Test Information

- 3.1. General
  - 3.1.1. The written test evaluates candidates' understanding of the following SPRAT standards and supplements:
    - 3.1.1.1. *Safe Practices for Rope Access Work.*
    - 3.1.1.2. *Rope Access Certification Requirements.*
    - 3.1.1.3. *Defined Terms.*
    - 3.1.1.4. *Rope Access Evaluation Guidelines.*
    - 3.1.1.5. *Clearance Requirement Guidelines.*
  - 3.1.2. The test is comprised of 50 multiple choice and true-false questions.
  - 3.1.3. There is only one correct answer for each question.
  - 3.1.4. A score of 80% or better constitutes a passing score for the written test.
- 3.2. First Written Test Attempt
  - 3.2.1. A candidate shall complete the written test prior to participating in the rope access evaluation.
    - 3.2.1.1. An upper-level written test may be used in conjunction with a lower-level rope access evaluation.
  - 3.2.2. The written test shall be completed no more than 10 days prior to the date of the rope access evaluation.
    - 3.2.2.1. A successful written test may be used for multiple rope access evaluations within this time frame.
  - 3.2.3. A candidate is permitted one opportunity to take the written test prior to the rope access evaluation.
  - 3.2.4. A candidate that fails their first written test attempt may participate in a rope access evaluation.
- 3.3. Second Written Test Attempt
  - 3.3.1. A candidate that fails their first written test attempt but passes their rope access evaluation may attempt the written test a second time within 10 days of the rope access evaluation to obtain a certification without reattending a rope access evaluation.
    - 3.3.1.1. The second written test may be completed immediately following the rope access evaluation.
  - 3.3.2. Following a successful second written test attempt, the rope access evaluation date is used to determine the expiration of the certification.

- 3.3.3. A candidate that fails their second written test attempt or fails to complete the written test within 10 days of the rope access evaluation must retake, in their entirety, both the written test and the rope access evaluation, to obtain a certification.
- 3.4. Written Test Administration
  - 3.4.1. Candidates may consult SPRAT standards and supplements during the written test.
  - 3.4.2. Candidates have one hour to complete the written test.
  - 3.4.3. Written tests should be taken online.
    - 3.4.3.1. Written tests may be paper based.
  - 3.4.4. Written tests shall be administered by an evaluator or a designated **proctor**.
    - 3.4.4.1. A **proctor** may be designated by an evaluator or the SPRAT Office.
  - 3.4.5. The evaluator or **proctor** shall:
    - 3.4.5.1. Verify candidate identity and personal information.
    - 3.4.5.2. Ensure consultation of only SPRAT standards and supplements.
    - 3.4.5.3. Ensure no discussion among candidates.
    - 3.4.5.4. Ensure no test materials are copied.
  - 3.4.6. A candidate may have the test read to them.
  - 3.4.7. If a candidate does not understand a question, clarification may be provided.
- 3.5. Online Written Tests
  - 3.5.1. The SPRAT Office provides online written test access information to evaluators and Evaluation Session Hosts.
  - 3.5.2. Results of online written tests can be sent to the candidate or individual that administers the written test.
  - 3.5.3. Test results shall be retained to present to the evaluator.
- 3.6. Paper-based Written Tests
  - 3.6.1. Written tests and answer keys shall remain secured and unavailable to a candidate prior to taking a paper-based written test.
  - 3.6.2. Candidates should ensure that they are marking their desired answer in a clear manner.
  - 3.6.3. Unanswered questions are considered as incorrect.
  - 3.6.4. Paper-based written tests should be graded immediately.
    - 3.6.4.1. The correct answer for each incorrect question should be marked.
    - 3.6.4.2. The test grade percentage should be written on top of the answer sheet.
  - 3.6.5. Candidates shall have the opportunity to review their written test.
    - 3.6.5.1. Candidates should place their initials adjacent to questions answered incorrectly.
  - 3.6.6. The **proctor** shall complete and sign SPRAT's *Proctor Affidavit*.
  - 3.6.7. The **proctor** shall return all testing materials to the evaluator.
    - 3.6.7.1. If the **proctor** cannot return the written test materials to the evaluator, the **proctor** shall destroy the materials after the evaluator or SPRAT Office has confirmed receipt of the results.

## 4. Rope Access Evaluation Policies

### 4.1. General

- 4.1.1. A candidate may participate in one rope access evaluation per calendar day.
- 4.1.2. A candidate's testing level may not be changed after the rope access evaluation begins.
- 4.1.3. A rope access evaluation may consist of up to eight candidates.
  - 4.1.3.1. Multiple evaluators may conduct rope access evaluations at a site simultaneously.
- 4.1.4. An evaluator may administer one rope access evaluation per calendar day.

### 4.2. Candidate Eligibility

- 4.2.1. Candidate eligibility shall be verified in accordance with *Rope Access Certification Requirements* prior to a candidate's participation in a rope access evaluation.
- 4.2.2. Experience
  - 4.2.2.1. Candidates attempting to initially upgrade to an upper level shall present their total experience hours and experience obtained at their current certification level documented in accordance with *Safe Practices for Rope Access Work*.
    - 4.2.2.1.1. Re-certification candidates should present up-to-date experience documentation.
  - 4.2.2.2. Though there can be factors beyond the control of a rope access technician, experience should be gained within a rope access program conforming to *Safe Practices for Rope Access Work*.
  - 4.2.2.3. The following types of experience may be applied towards upgrade eligibility:
    - 4.2.2.3.1. Constructing and dismantling **rope access systems**.
    - 4.2.2.3.2. Work using **rope access systems**.
    - 4.2.2.3.3. Site survey and **access work plan** development.
    - 4.2.2.3.4. Equipment inspection before use at the worksite.
    - 4.2.2.3.5. Training and practice under supervision of a **competent trainer**.
  - 4.2.2.4. The following types of experience may not be applied towards upgrade eligibility:
    - 4.2.2.4.1. Use or training of other fall protection systems, including rope descent systems.
    - 4.2.2.4.2. Practice or study without the supervision of a **competent trainer**.
    - 4.2.2.4.3. The use of **two-rope systems** for training of single rope techniques.
    - 4.2.2.4.4. Standby rescue.
  - 4.2.2.5. Experience recorded at a previous rope access evaluation may be used to satisfy experience requirements and is available within a candidate's account in SPRAT's system.
- 4.2.3. Direct Entry approval shall be verified in accordance with Section 9.
- 4.2.4. Written test results shall be verified in accordance with Section 3.

### 4.3. Constraints

- 4.3.1. Candidates may consult SPRAT documentation during the rope access evaluation.
- 4.3.2. Candidates may only have one attempt to complete each certification requirement.
- 4.3.3. Certification requirements are evaluated once unless needed to complete subsequent requirements.
- 4.3.4. Certification requirements may be combined within one exercise.
- 4.3.5. Unless otherwise directed, candidates participating in group exercises are evaluated at their testing level.
- 4.3.6. Loads used in system construction and operation requirements shall have a mass of at least 45 kg (100 lbs).
- 4.3.7. Loads may replace individuals as rescue subjects if they have a mass of at least 70 kg (155 lbs) and incorporate or have features that simulate a harness suitable for rope access.

#### 4.4. Grading

4.4.1. To obtain a passing result, all certification requirements at a testing level must be completed during one rope access evaluation without being issued a **fail** or three **discrepancies**.

4.4.1.1. Evaluation scheme details for each rope access certification level can be found in Section 5.1.

4.4.2. A candidate may be evaluated until they and the evaluator have signed off on their result.

4.4.3. Grading is based on performance principles of Section 4 of *Rope Access Certification Requirements*.

4.4.4. Evaluators may seek clarity regarding a candidate's actions.

4.4.5. Evaluators may invoke time limits due to a lack of forward progress or inefficient technique.

4.4.6. The following table presents grading examples from SPRAT's *Evaluation Rubric*.

4.4.6.1. Circumstances with increased or reduced risk can cause an evaluator to deviate from this guidance.

	<b>Fail examples</b>	<b>Discrepancy examples</b>
<b>General</b>	Inability to complete requirement No fall protection in <b>fall zone</b>	Violation of <b>access work plan</b> Dropped equipment
<b>Equipment</b>	<b>Free fall potential</b> of <b>backup system</b> $\geq$ 1.2 m (4 ft) Backup device or <b>descender</b> threaded incorrectly	<b>Free fall potential</b> of <b>backup system</b> $\geq$ 0.6 m (2 ft) Descending without brake hand on rope
<b>Maneuvers</b>	<b>Deviation:</b> Connection to <b>directional anchorage system</b> used to replace <b>main</b> or <b>backup system</b> Knot pass: Bight isolated by knots simulating damaged rope used in <b>main</b> or <b>backup system</b> Rope-to-rope transfer and <b>re-anchor:</b> <b>Main system</b> without <b>backup system</b> towards a side while negotiating maneuver	Edge Negotiation with Rope Protection: Backup device lanyard unprotected over edge <b>Re-anchor:</b> <b>Fall line</b> of rope to lower level adjusted during completion of maneuver
<b>System Construction and Operation</b>	Anchorage system insufficient strength	Inappropriate tensioning of system for scenario
<b>Rescue</b>	Incompatible <b>backup system</b> configuration Rescue subject suspended from single system	No extra friction used when descending

#### 4.5. Results

4.5.1. Following submission of rope access evaluation and written test results, provisional certification information, valid for 60 days, is available on SPRAT's [certification verification system](#) and in successful candidates' accounts.

4.5.2. Certificates are available within candidate and Evaluation Session Host accounts and certification cards are processed after the SPRAT Office has received evaluation fees and verified certification information.

4.5.3. Candidates retain any current certification following an unsuccessful rope access evaluation.

4.5.4. Results from an unsuccessful rope access evaluation may not be used to fulfill requirements during a subsequent rope access evaluation.

4.5.5. Unsuccessful candidates may not provide further assistance in a rope access evaluation.

#### 4.6. Evaluation Feedback

4.6.1. [Evaluation Session Host](#) and [Candidate](#) Feedback is used to assess and improve the effectiveness of the certification process and evaluator performance.

#### 4.7. Complaints and Appeals.

4.7.1. Complaints and appeals shall be submitted in accordance with *Rope Access Certification Requirements* within 60 days of a rope access evaluation.

4.7.2. The SPRAT Office shall anonymize documentation before review by the Evaluations Committee when feasible.

4.7.3. Complaints and appeals are addressed once by the Evaluations Committee and Board of Directors.



## 5. Rope Access Evaluation Scheme and Supplementary Information

	Level 1	Level 2	Level 3
<b>General</b>			
Performance Principles	6.1	7.2	8.2
System Analysis		7.3	8.3
<b>Maneuvers</b>			
Fundamental Maneuvers	6.2		
Edge Negotiation with Rope Protection	6.3		
Deviation	6.4		
Knot Pass	6.5		
Rope-to-Rope Transfer (> 2 m)	6.6		
Re-anchor (> 2 m)	6.7		
Aid Climbing			
Horizontal	6.8		
Vertical		7.4	
<b>System Construction and Operation</b>			
Knots: <input type="checkbox"/> Termination <input type="checkbox"/> Middle <input type="checkbox"/> Stop <input type="checkbox"/> Join	6.9		
Two-Rope System			
Anchorages < 1 m apart	6.10		
Edge Negotiation, Anchorages 1 m - 4 m apart		7.5	
Retrievable Two-Rope System		7.6	
Deviation or Re-anchor			8.4
Raising and Lowering			
Ground or Platform-Based	6.11		
Suspended Candidate		7.7	
Suspended Load		7.8	
Through Knots			8.5
Lateral Movement			
Cross-Haul		7.9	
Tensioned Rope System			8.6
Remote Rescue System		7.10	
<b>Rescue</b>			
Adjacent Rope Set, Ascent to Descent Transition	6.12	See 5.1.2.1	See 5.1.2.1
Same Rope Set, Rope-to-Rope Transfer		7.11	
From Fall Arrest System		7.12	
From Maneuver 1			8.7
From Maneuver 2			8.7

### 5.1. Evaluation Schemes

5.1.1. The table above depicts the evaluation scheme for each rope access certification level.

5.1.1.1. Bold numbers in Level columns correspond to *Rope Access Certification Requirements (RCR)*.

5.1.2. Candidates shall complete all white boxes in their testing level.

5.1.2.1. Upper-level candidates may satisfy the Rescue: Adjacent Rope Set, Ascent to Descent Transition requirement ([RCR 6.12](#)) by performing an ascent-to-descent transition of a rescue subject during another rescue on the same *two-rope system*.

5.1.3. Currently certified candidates shall complete at least 50% of gray boxes in each category of their testing level.

5.1.4. Direct Entry and candidates with expired certifications shall complete all gray boxes in their testing level.

## 5.2. Supplementary Information

5.2.1. Requirements for each rope access certification level are provided in Sections 6, 7 and 8, respectively.

5.2.1.1. Additional information for configuring a site can be found in Sections 10, 11, and 12.

5.2.2. Following each requirement, a table is provided with the following headings:

5.2.2.1. Perspective.

5.2.2.2. Performance.

5.2.2.3. Training.

### **Perspective.**

SPRAT's rope access evaluation is a test instrument to observe candidate knowledge and skills during the completion of requirements of *Rope Access Certification Requirements*. These requirements were developed following a comprehensive review and assignment of rope access knowledge and skills to each certification level. The perspective section complements each requirement by providing:

- Applications to rope access work.
- References to relevant SPRAT standards and supplements.
- Relevant knowledge and skills.
- Considerations for rope access work environments.
- Configurations specific to the evaluation environment.

Requirements are designed to provide demonstrable objectives for candidates. Practical applications of knowledge and skills improve the clarity of evaluation expectations and can improve learning outcomes and chances of a successful rope access evaluation result.

### **Performance.**

The performance principles in Section 4 of *Rope Access Certification Requirements* establish expectations of candidates throughout the rope access evaluation. The performance section for each requirement complements these performance principles by providing:

- Considerations for candidates that typically lead to successful completion of a requirement.
- Permissions and constraints for candidates and evaluators.
- Common requirement combinations.

As SPRAT rope access evaluations are performance-based, there can be multiple ways to successfully complete requirements in accordance with SPRAT's performance principles.

### **Training.**

Knowledge and skills to complete requirements can sometimes be trained more efficiently through separate lessons or exercises. Training considerations are presented to prepare a candidate to successfully complete each requirement, including:

- Review of relevant SPRAT standard, supplements, and other supporting documentation.
- Practical exercises to develop knowledge and skills.

Evaluation Session Hosts are encouraged to perform a needs assessment prior to training to incorporate learning objectives, suitable equipment, and supplementary information that are relevant to candidates and their potential work environments.

## 6. Level 1 Technician Requirements - Supplementary Information

### 6.1. Performance Principles

6.1.1. Candidate shall adhere to the performance principles in [*Rope Access Certification Requirements*] Section 4 throughout the rope access evaluation.

#### Perspective.

The performance principles in Section 4 of *Rope Access Certification Requirements* provide a foundation of expectations for candidates to comply with *Safe Practices for Rope Access Work* while participating in a rope access evaluation. Performance principles are the basis for grading candidates and apply during the entire rope access evaluation.

Performance principles:

- Establish the rope access evaluation as a performance-based test instrument.
  - Candidates may use equipment and techniques of their choosing to complete requirements.
- Require timely completion of requirements.
  - As stated in Section 4, evaluators may invoke time limits due to a lack of forward progress or inefficient technique.
- Require adherence to the site **access work plan**.
- Require the inspection, selection, and use of equipment in accordance with *Safe Practices for Rope Access Work*.
- Focus on minimizing **free fall potential** and potential **swing fall**.
  - Minimizing **free fall potential** is applicable in nearly all requirements, including maneuvers, operations, and rescue.
  - Minimizing potential **swing fall** is highlighted in rope-to-rope transfer ([RCR 6.6](#)) and **re-anchor** ([RCR 6.7](#)) requirements.

#### Performance.

As part of meeting these performance principles, candidates are expected to:

- Complete requirements in a timely manner.
- Follow the site **access work plan** throughout the rope access evaluation.
- Inspect, select, and use equipment in accordance with *Safe Practices for Rope Access Work*, including:
  - Inspecting equipment before initial use and following rest breaks.
  - Connecting equipment to appropriate attachments on the harness.
  - Ensuring that equipment is threaded or loaded correctly before use.
  - Protecting equipment from damage.
- Minimize **free fall potential** and potential **swing fall** throughout the rope access evaluation.
  - Candidates may use solely a **backup system** or other fall protection system to maintain **limited free fall potential** in a **fall zone**, including when near an edge of a stable surface or climbing a structure.

#### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Review of *Safe Practices for Rope Access Work*.
- Review of performance principles and their relation to requirements of a candidate's testing level.
- Review of site **access work plan**.
- Review of manufacturer instructions for equipment used to complete requirements.

## 6.2. Fundamental Maneuvers

6.2.1. Candidate shall ascend and descend at least 2 m (6.6 ft) using a **two-rope system** with:

6.2.1.1. A **descender** as their primary connection within the **main system**.

6.2.1.2. An **ascender** as their primary connection within the **main system**.

6.2.2. While using a **two-rope system**, a candidate shall:

6.2.2.1. Transition from **ascent mode** to **descent mode**.

6.2.2.2. Transition from **descent mode** to **ascent mode**.

### Perspective.

This requirement highlights the fundamental individual movements used in rope access.

Other maneuvers with **two-rope systems** can be viewed as exercises to demonstrate further competence of and ability to address issues with these fundamentals movements.

### Performance. (RCR 6.1)

**Backup devices.** Candidates are expected to:

- Maintain **limited free fall potential**.
- Maintain backup device effectiveness, including during manual adjustments.

**Descenders.** Candidates are expected to:

- Maintain control of the brake strand of the **main rope** unless the **descender** is secured from inadvertent use.
- Maintain correct placement of the brake strand of the **main rope** on the **descender** when descending.
- Minimize slack above the **descender** when ascending.

**Ascenders.** Candidates are expected to:

- Maintain attachments between **ascenders** and the harness when ascending or descending in **ascent mode**.
- Use **ascenders** in a manner to prevent inadvertent detachment from the **main rope**.

One **ascender** is typically acceptable as the sole attachment within a **main system** when the following criteria are met:

- The **ascender** is stationary on the **main rope**.
- The **ascender** is loaded in-line with tension applied to the **main rope** by the **ascender** or other means.
- There is less than 0.3 m (1 ft) of **free fall potential** in the **main system**.

**Transitions Between Ascent and Descent Modes.** Candidates are expected to:

- Ensure that the chest **ascender** is above the **descender** on the **main rope** when performing transitions.
- Minimize rope slack between equipment on the **main rope** when performing transitions.
- Ensure correct loading of **carabiners** and other equipment when performing transitions.

Candidates may complete the requirement separately or as part of other requirements.

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Review of manufacturer instructions for equipment required for fundamental maneuvers.
- Harness and equipment configurations suitable for rope access.
- Descent with **descenders**.
- Ascent with **ascenders**.
- Transition from **ascent mode** to **descent mode** and from **descent mode** to **ascent mode**.
- Ascent with **descenders**.
- Descent with **ascenders**.

### 6.3. Edge Negotiation with Rope Protection

6.3.1. Candidate shall ascend and descend a **two-rope system** past an edge obstruction that creates an interior angle of less than 120 degrees.

6.3.2. Candidate shall pass rope protection installed on the **two-rope system** at the edge obstruction.

#### Perspective.

Edge obstructions, such as edges along flat and sloped surfaces and parapet walls, as well as sharp or abrasive surfaces, are common in rope access work environments.

All **two-rope systems** over edges and surfaces are expected to be appropriately protected. **Main** and **backup ropes** can be protected individually or together. The type of rope protection is not specified but is expected to be suitable for the site.

Factors affecting the need for, and effectiveness of rope and edge protection include the:

- Characteristics of an edge or surface.
- Potential movement of equipment along an edge or surface.
- Internal angle of ropes at an edge or surface.
- Angle at which ropes cross an edge or surface.

#### Performance. ([RCR 6.1](#))

Candidates are expected to:

- Ascend and descend past an edge while maintaining an effective **backup system** and protecting all equipment.
  - Candidates may pass an edge in **ascent mode** or **descent mode**.
- Ensure that the **two-rope system** crosses perpendicular to the edge.
- Ensure rope and edge protection remains effective while negotiating the edge.

#### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Fundamental maneuvers ([RCR 6.2](#)).
- Transition to and from a **rope access system** while in a **fall zone**.
- Use of rope ladders, etriers, or adjustable foot loops.
- Review of types of and factors affecting the need for and effectiveness of rope and edge protection.

#### 6.4. Deviation

- 6.4.1. Candidate shall ascend and descend past a **directional anchorage system** that adjusts the **fall line** of a **two-rope system** by approximately 20 degrees.

##### Perspective.

**Deviations** can be used to provide efficient access to a location, to avoid an obstacle, or to protect a **two-rope system**.

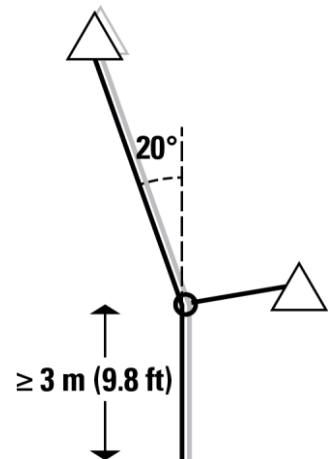
See Section 12 of *Safe Practices for Rope Access Work* for information regarding the suitability of **anchorages** for **directional anchorage systems**.

Multiple **directional anchorage systems** should be considered when:

- **Directional anchorage system** failure creates a risk to the **rope access system**, individuals, or property.
- Potential **swing fall** exceeds 0.3 m (1 ft).

An illustration of a **deviation** in accordance with site station requirements of Section 11 is shown in Figure 1.

FIGURE 1: DEVIATION.



##### Performance. (RCR 6.1)

Candidates are expected to:

- Use fundamental maneuvers (RCR 6.2) to ascend and descend at least 1.2 m (4 ft) past a **directional anchorage system** in a controlled manner.
- Remain in **ascent mode** or **descent mode** when passing the **directional anchorage system**.
- Maintain a connection to the **directional anchorage system** within the **rope access system**.
  - Multiple **anchorage connectors** or temporary connections may be used to pass the **directional anchorage system**.
  - Temporary connections to the **directional anchorage system** may not replace a **main** or **backup system**.
- Provide a means for returning to the **directional anchorage system** from above.
  - To accommodate efficient transitions and descent, the means for returning should be placed on the ropes below the **directional anchorage system** a distance greater than the horizontal adjustment of the **fall line**.
  - **Fall line** adjustment may be increased and exceed 20 degrees after ascent past the **directional anchorage system**.
- Maintain access for **deviation** use and prompt rescue from below.
  - Connectors that the **two-rope system** passes through should be locked.
  - Ropes should remain accessible at the lower level after passing the **directional anchorage system**.

##### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Fundamental maneuvers (RCR 6.2).
- Applications of **deviations**.
- Techniques for passing **directional anchorage systems**.
- Considerations for the use of multiple **directional anchorage systems** in a **deviation**.

## 6.5. Knot Pass

6.5.1. Candidate shall ascend and descend past knots located at a similar height in both ropes of a **two-rope system**.

### Perspective.

Knots can be used to join ropes together as part of planned work or to isolate damaged sections of rope. Knots can be passed during planned work and self-rescue.

### Performance. ([RCR 6.1](#))

Candidates are expected to:

- Apply fundamental maneuvers ([RCR 6.2](#)) to ascend and descend at least 1.2 m (4 ft) past knots.
  - Knots should be placed at least 3 m (9.9 ft) above the next lower level.
  - Knots should be placed with less than 0.3 m (0.9 ft) of vertical separation on the **two-rope system**.
  - Bights isolated by knots passed during an evaluation are assumed to simulate damaged rope sections and may not be incorporated within a **main** or **backup system**.
- Tie and untie knots, as required, on **main** and **backup ropes** below their connections to the **rope access system**.

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Fundamental maneuvers ([RCR 6.2](#)).
- Applications of passing knots.
- Tying middle or join knots while in suspension ([RCR 6.9](#)).

## 6.6. Rope-to-Rope Transfer

6.6.1. Candidate shall transfer from one **two-rope system** to another located at least 2 m (6.6 ft) from the initial **two-rope system**.

### Perspective.

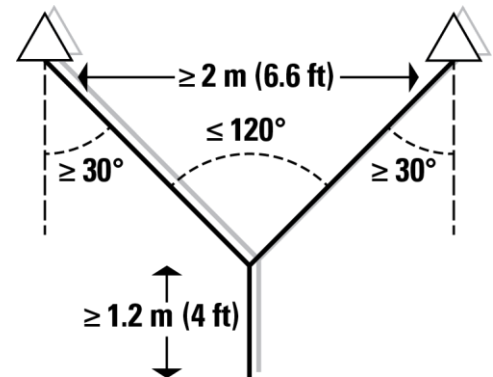
Rope-to-rope transfers can be used to provide efficient access from one **two-rope system** to another or to a location between **two-rope systems**.

Typically, a rope-to-rope transfer is completed using **descent mode** on the initial **two-rope system** and **ascent mode** on the destination **two-rope system**.

When completing tasks within a rope-to-rope transfer, considerations for prompt rescue should include using **remote rescue systems** ([RCR 7.10](#)) and **descent mode** on both **two-rope systems**.

An illustration of a rope-to-rope transfer in accordance with site station requirements of Section 11 is shown in [Figure 2](#).

FIGURE 2: ROPE-TO-ROPE TRANSFER



### Performance. ([RCR 6.1](#))

Candidates are expected to:

- Ensure access to a destination **two-rope system** located at least 2 m (6.6 ft) from an initial **two-rope system**.
- Initiate the rope-to-rope transfer while in **descent mode** at least 1.2 m (4 ft) above the next lower level.
- Establish a **main** and **backup system** on the destination **two-rope system**.
  - Candidates may use **ascent mode** or an additional **descent mode** on the destination **two-rope system**.
- Maintain effective **main** and **backup systems** on both **two-rope systems** during the rope-to-rope transfer.
  - Knots may be used to establish a **backup system** while a candidate completes the exercise.
- Maintain access for prompt rescue from below.
  - Ropes from at least one of the **two-rope systems** should remain accessible at the next lower level.

Candidates are not expected to return to the initial **two-rope system** after completing the maneuver.

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Fundamental maneuvers ([RCR 6.2](#)).
- Applications of rope-to-rope transfers.
- Considerations for working within a rope-to-rope transfer.



## 6.7. Re-anchor

6.7.1. Candidate shall ascend and descend past **fixed anchorage systems** that adjust the **fall line** of a **two-rope system** by at least 2 m (6.6 ft).

### Perspective.

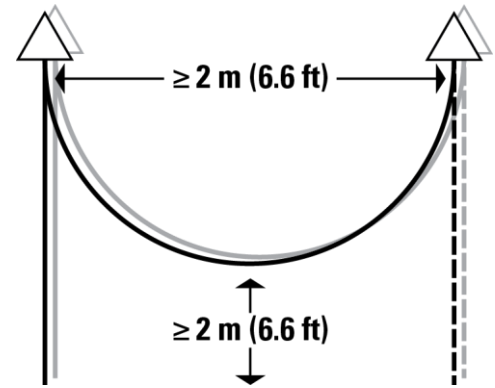
**Re-anchors** can be used to provide efficient access to a location, to avoid an obstacle, or to protect a **two-rope system** where a **deviation** or multiple **two-rope systems** are impractical. **Re-anchors** can also be used to separate sections of a **two-rope system** along the same **fall line**.

Typically, negotiation of a **re-anchor** is completed using **descent mode** on the initial side of the **re-anchor** and **ascent mode** on the destination side of the **re-anchor**.

When completing tasks within a **re-anchor**, considerations for prompt rescue should include using **remote rescue systems** ([RCR 7.10](#)) and **descent mode** on **two-rope systems**.

An illustration of a re-anchor in accordance with site station requirements of Section 11 is shown in [Figure 3](#). The **two-rope system** represented by dashed lines is an optional configuration for access and egress.

FIGURE 3: RE-ANCHOR



### Performance. ([RCR 6.1](#))

Candidates are expected to:

- Ascend as high as practical towards the intermediate **anchorage systems** of the **re-anchor**.
- Transition to **descent mode** on the initial side of the **re-anchor**.
  - Candidates may transition directly between **ascent** and **descent modes** on adjacent **two-rope systems**.
- Ensure that the ropes reaching the next lower level will remain with an unadjusted **fall line** and accessible at the next lower level during the transfer to the destination side of the **re-anchor**.
- Establish a **main** and **backup system** on the destination side of the **re-anchor**.
  - Candidates may use **ascent mode** or an additional **descent mode** on the destination side of the **re-anchor**.
- Negotiate the **re-anchor** while maintaining effective **main** and **backup systems** on both sides of the **re-anchor** and avoiding its lowest point.
- Maintain access for **re-anchor** use and prompt rescue from below.

Candidates are not expected to return through the **re-anchor** unless there is no other method of egress.

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Fundamental maneuvers ([RCR 6.2](#)).
- Rope-to-rope transfers ([RCR 6.6](#)).
- Applications of **re-anchors**.
- Considerations for working within a **re-anchor**.

## 6.8. **Aid Climbing:** Horizontal

6.8.1. Candidate shall demonstrate **aid climbing** horizontally for a distance of at least 3 m (10 ft).

### **Perspective.**

**Aid climbing** can be used to access a location where **rope systems** are impractical or unavailable.

### **Performance. (RCR 6.1)**

Candidates are expected to:

- Transition to and from **aid climbing** via a **rope access system** or climbing structure while using an effective **backup system** or other appropriate fall protection system.
- Select and use equipment in a manner that facilitates efficient movement and prompt rescue.
  - Candidates may demonstrate **aid climbing** using connections that are adjustable or fixed while under tension.
- Minimize **free fall potential** with connections to at least two **anchorage systems** throughout the maneuver.
  - Candidates may demonstrate **aid climbing** using either **fixed** or movable **anchorage systems**.
  - Candidates using movable **anchorage systems** may be asked to pass an obstacle during completion of the maneuver.
- Maintain access for **aid climbing** station use and of prompt rescue from below.
  - **Rope systems** or other fall protection systems reaching the next lower level should remain accessible at the next lower level with an unadjusted **fall line**.

### **Training.**

Considerations to prepare candidates to successfully complete the requirement include:

- **Aid climbing** equipment configurations and considerations.
- Simulating **aid climbing** while on the ground or a platform.
- **Aid climbing** with both **fixed** and movable **anchorage systems**.
- Transitioning to and from **aid climbing** from another **rope access system** or fall protection system.

## 6.9. Knots

6.9.1. Candidate shall tie knots that can be used to:

- 6.9.1.1. Attach a rope to an anchorage connector or **anchorage** (i.e., termination knot).
- 6.9.1.2. Isolate a bight that allows the rope to be loaded in line (i.e., middle knot).
- 6.9.1.3. Prevent descending off the end of ropes (i.e., stop knot).
- 6.9.1.4. Join two ropes together (i.e., join knot).

### Perspective.

This requirement highlights fundamental applications for knots in rope access.

Knots used in rope access should be:

- Suitable for the application.
- Tightened by hand prior to use.
- Identifiable.

SPRAT's rope access evaluation is a performance-based test instrument and specific knots to complete requirements are not provided in the *Rope Access Certification Requirements*. Common examples include:

Termination knot.	Middle knot.	Stop knot.	Join knot.
<ul style="list-style-type: none"><li>• Figure 8 on a bight.</li><li>• Bowline.</li></ul>	<ul style="list-style-type: none"><li>• Butterfly.</li><li>• In-line figure 8.</li></ul>	<ul style="list-style-type: none"><li>• Figure 8.</li><li>• Double overhand.</li></ul>	<ul style="list-style-type: none"><li>• Figure 8 bend.</li><li>• Double fisherman's bend.</li></ul>

### Performance. ([RCR 6.1](#))

Candidates are expected to:

- Tie an identifiable knot suitable for each of the four applications of the requirement.
- Ensure integrity and correct use of knots within applications.

Candidates may complete the requirement separately or as part of other requirements, such as passing knots ([RCR 6.5](#)) and constructing a two-rope system ([RCR 6.10](#)).

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Applications of knots used in rope access.
- Nomenclature of knots and knot elements.
- Tying of knots.
- Use of knots in applications to complete requirements.

## 6.10. *Two-Rope System*

6.10.1. Candidate shall construct a *two-rope system*.

6.10.2. Candidate shall construct the *anchorage system* for each *rope system* using either:

6.10.2.1. A single *anchorage*.

6.10.2.2. Two *anchorages* or *anchorage connectors* located less than 1 m (3.3 ft) apart.

### Perspective.

*Two-rope systems* are fundamental within *rope access systems*, including those used for rope access maneuvers, operations, and rescue.

Considerations for constructing *anchorage systems* for *two-rope systems* should include:

- *Anchorage* location.
- *Anchorage* strength.
- Desired *fall line* or direction of applied force.
- Compatible equipment selection, loading, and protection ([RCR 6.3](#)).
- Interior angle between and within *anchorage connectors*.
- Consequences of component failure within an *anchorage system*.

See Section 12 of *Safe Practices for Rope Access Work* for more information.

### Performance. ([RCR 6.1](#))

Candidates are expected to:

- Construct *anchorage systems* in accordance with *Safe Practices for Rope Access Work*.
  - Evaluators may designate a *fall line* or direction of applied force.
  - Load-sharing *anchorages systems* may be required.
- Construct a *two-rope system* suitable for use along an unobstructed *fall line*.
- Demonstrate use of the *two-rope system* within a *rope access system*.
  - Evaluators may ask candidates or other individuals to use the constructed *two-rope system*.

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Review of Section 12 of *Safe Practices for Rope Access Work*.
- Considerations for constructing *anchorage systems*.
- Tying knots ([RCR 6.9](#)).
- Construction, inspection, and use of *two-rope systems*.

## 6.11. Raising and Lowering

6.11.1. From the ground or a platform, candidate shall construct and operate a system to raise and lower an individual or load at least 3 m (10 ft) along an unobstructed **fall line**.

### Perspective.

Raising and lowering systems can be used to move a load during planned work and rescue.

Considerations for constructing and operating raising and lowering systems should include:

- Making compatible connections to individuals or loads.
  - **Main system** connections are typically made to the ventral harness attachment for work applications, and to the sternal connection for rescue applications.
  - **Backup system** connections are typically made to the sternal harness attachment for all applications.
- Managing ropes.
  - Ropes should be routed neatly from the load and threaded correctly through equipment at the **anchorage systems**, with additional rope managed for efficient use.
  - Ends of ropes should be managed to maintain **main** and **backup systems** integrity during operations.
- System operation.
  - Systems should be operated in a controlled manner.
  - Individuals operating a raising and lowering system should avoid making connections from their harness to the raising or lowering system when practical.
  - Raising systems should be configured to be operated and move the load efficiently.

### Performance. (RCR 6.1)

Candidates are expected to:

- Construct and operate a raising and lowering system with a **fixed backup system** or **dual main system**.
  - Candidates may complete this requirement within a group exercise such as in a cross-haul (RCR 7.9) but remain responsible to construct and operate their system without guidance.
  - Candidates may begin with raising or lowering the load.
- Raise and lower the load in a controlled manner while maintaining **limited free fall potential**.
  - Candidates may construct a raising system using the **main rope** or may use a separate raising system.
- Use equipment in a manner consistent with fundamental maneuvers (RCR 6.2).
  - Candidates may route ropes through connectors at the **anchorage system** as needed.

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Considerations for constructing and operating raising and lowering systems.
- Constructing and operating a **fixed backup system**.
- Constructing and operating a lowering system.
- Constructing and operating a raising system.
- Converting between raising and lowering systems.

## 6.12. Rescue: Adjacent Rope Set, Ascent to Descent Transition

6.12.1. Candidate shall approach an individual that is in **ascent mode** on an adjacent **two-rope system**.

6.12.2. Candidate shall transition the individual from **ascent mode** to **descent mode**.

6.12.3. Candidate shall transition the individual and themselves to the same **rope access system**.

6.12.4. Candidate shall descend with the individual to the next lower level.

### Perspective.

This requirement demonstrates the following fundamental rescue skills:

- Incorporating an adjacent **two-rope system** into a rescue plan.
- Performing a short lift of a rescue subject.
- Applying fundamental maneuvers ([RCR 6.2](#)) to another individual's equipment.
- Establishing connections to a rescue subject.

Techniques typically used to complete this requirement can be applied to the rescue of an individual:

- From **ascent mode**.
- From **descent mode**.
- Suspended from a backup device.
- Where rope elongation is a complicating factor.

The rescue subject shall be in **ascent mode** at least 3 m (9.9 ft) above the next lower level.

### Performance. ([RCR 6.1](#))

Candidates are expected to:

- Access and position themselves as close to the rescue subject as is practical on an adjacent **two-rope system**.
  - Candidate may access the rescue subject from either direction on the adjacent **two-rope system**.
- Perform a transition of the rescue subject from **ascent mode** to **descent mode** while ensuring **limited free fall potential** for the rescue subject.
  - The rescue subject's **main** and **backup ropes** may remain the same or be interchanged during the transition.
- Transition the rescue subject and themselves to the same **rope access system**.
  - Connections between the rescue subject and candidate may be made at any time provided they do not interfere with the transition of the rescue subject from **ascent mode** to **descent mode**.
  - This performance step is evaluated when descent is initiated with the candidate and rescue subject.
  - Adjacent **rope systems** within the exercise remain available for use to address issues encountered during descent.
- Descend in a controlled manner using additional friction on the brake strand of the **main rope** as appropriate.
  - Manufacturer guidance, the condition of equipment, combined weight of the candidate and rescue subject, and proximity to the next lower level should be considered when determining the need for additional friction.

The requirement may be combined with others, such as establishing a **two-rope system** adjacent to the rescue subject in accordance with ([RCR 6.10](#)).

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Equipment considerations for rescue.
- Considerations for establishing connections between a rescue subject and rescuer.
- Performing rescue from **descent mode**.
- Methods to transition an individual from **ascent mode** to **descent mode**.

## 7. Level 2 Technician Requirements - Supplementary Information

7.1. Candidate shall be proficient in *Level 1 Technician* requirements.

### Perspective.

*Level 2 Technician* requirements build upon the foundation of knowledge, skills, and techniques of a *Level 1 Technician*.

All candidates are required to complete fundamental maneuvers ([RCR 6.2](#)) and Rescue: Adjacent Rope Set, Ascent to Descent Transition ([RCR 6.12](#)). Upper-level candidates may satisfy this rescue requirement by performing an ascent-to-descent transition of a rescue subject during another rescue on the same *two-rope system*.

### Performance.

Candidates are expected to complete *Level 1 Technician* requirements in accordance with their evaluation scheme.

Refer to Section 5 for more information.

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Candidate self-assessment of ability to complete *Level 1 Technician* requirements ([RCR 6](#)).
- Review of documentation and refresher training of *Level 1 Technician* requirements ([RCR 6](#)), as needed.

## 7.2. Performance Principles

7.2.1. Candidate shall adhere to the performance principles in [*Rope Access Certification Requirements*] Section 4 throughout the rope access evaluation.

### Perspective.

The performance principles in Section 4 of *Rope Access Certification Requirements* provide a foundation of expectations for candidates to comply with *Safe Practices for Rope Access Work* while participating in a rope access evaluation.

Performance principles are the basis for grading candidates and apply during the entire rope access evaluation.

Performance principles:

- Establish the rope access evaluation as a performance-based test instrument.
  - Candidates may use equipment and techniques of their choosing to complete requirements.
- Require timely completion of requirements.
  - As stated in Section 4, evaluators may invoke time limits due to a lack of forward progress or inefficient technique.
- Require adherence to the site **access work plan**.
- Require the inspection, selection, and use of equipment in accordance with *Safe Practices for Rope Access Work*.
- Focus on minimizing **free fall potential** and potential **swing fall**.
  - Minimizing **free fall potential** is applicable in nearly all requirements, including maneuvers, operations, and rescue.
  - Minimizing potential **swing fall** is highlighted in cross-hauls (**RCR 7.9**) and rescue (**RCR 7.11**) requirements.

### Performance.

As part of meeting these performance principles, candidates are expected to:

- Complete requirements in a timely manner.
- Follow the site **access work plan** throughout the rope access evaluation.
- Inspect, select, and use equipment in accordance with *Safe Practices for Rope Access Work*, including:
  - Inspecting equipment before initial use and following rest breaks.
  - Connecting equipment to appropriate attachments on the harness.
  - Ensuring that equipment is threaded or loaded correctly before use.
  - Protecting equipment from damage.
- Minimize **free fall potential** and potential **swing fall** throughout the rope access evaluation.
  - Candidates may use solely a **backup system** or other fall protection system to maintain **limited free fall potential** in a **fall zone**, including when near an edge of a stable surface or climbing a structure.

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Review of *Safe Practices for Rope Access Work*.
- Review of performance principles and their relation to requirements of a candidate's testing level.
- Review of site **access work plan**.
- Review of manufacturer instructions for equipment used to complete requirements.



### 7.3. System Analysis

- 7.3.1. Candidate shall demonstrate the ability to estimate potential forces and clearance requirements within **rope access systems** used during the completion of requirements.

#### Perspective.

##### Force Analysis

Section 12 of *Safe Practices for Rope Access Work* bases **anchorage system** strength requirements on the force applied by a **backup system** when stopping a fall. The minimum value of 12 kN (2700 lbf) was established to conform with voluntary consensus standards, such as EN 12841, where the maximum allowable force of a **backup system** is 6 kN (1350 lbf), and ISO 22846; however, conformance with SPRAT standards can require higher **anchorage system strengths** based on system construction or **presiding regulatory authority** requirements.

Section 12 of *Safe Practices for Rope Access Work* provides two tables to assist in force analysis of **rope access systems**.

- Table 1 provides relative forces on **anchorages** in an equally distributed load-sharing **anchorage system**.
- Table 2 provides relative forces on the **anchorage** in a **directional anchorage system**.

These tables can be used to identify configurations within **rope access systems** that result in an increase or decrease of forces relative to the force applied by an individual or load.

##### Clearance Requirement Analysis

SPRAT's *Clearance Requirement Guidelines* was developed to provide resources to comply with the risk assessment requirements in Section 9 of *Safe Practices for Rope Access Work*. This supplement provides contributing factors within each phase of a fall event and other factors that contribute to clearance requirements. **Level 2 Technicians** should be able to analyze and estimate the following factors within a **rope access system**:

- **Free fall distance** factors, including **free fall potential** and **activation distance**.
- **Deceleration distance** factors, including rope stretch and energy dissipation of **backup systems**.
- Other clearance requirement factors, such as **stretch-out** and clearance margins.

#### Performance. (RCR 7.2)

**Force Analysis.** Candidates are expected to:

- Estimate potential forces applied by a **backup system** when it stops a fall.
- Estimate relative forces within system construction and operation requirements, such as Two-Rope System for Edge Negotiation (RCR 7.5) and Cross-Haul (RCR 7.9).

Candidates may be asked force analysis questions as part of the written test and during the rope access evaluation.

**Clearance Requirement Analysis.** Candidates are expected to:

- Estimate **free fall potential** within requirements.

Candidates may be asked questions related to factors affecting clearance requirement as part of the written test.

Candidates may be asked questions related to **free fall potential** during the rope access evaluation.

#### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Review of Tables 1 and 2 in *Safe Practices for Rope Access Work* and their applications in Level 2 requirements.
- Analysis of forces in system construction and operation requirements (RCR 7.5, RCR 7.9).
- Review of factors affecting clearance requirements in *Clearance Requirement Guidelines*.

#### 7.4. **Aid Climbing:** Vertical

7.4.1. Candidate shall demonstrate **aid climbing** vertically or at an angle for a distance of at least 3 m (10 ft).

##### **Perspective.**

**Aid climbing** can be used to access a location where **rope systems** are impractical or unavailable.

Principles of **aid climbing** horizontally ([RCR 6.8](#)) can be applied to **aid climbing** vertically or at an angle. Equipment configurations and techniques should be reviewed to ensure **free fall potential** can be minimized.

##### **Performance.** ([RCR 7.2](#))

Candidates are expected to:

- Transition to and from **aid climbing** via a **rope access system** or climbing structure while using an effective **backup system** or other appropriate fall protection system.
- Select and use equipment in a manner that facilitates efficient movement and prompt rescue.
  - Candidates may demonstrate **aid climbing** using connections that are adjustable or fixed while under tension.
- Minimize **free fall potential** with connections to at least two **anchorage systems** throughout the maneuver.
- Maintain access for **aid climbing** station use and prompt rescue from below.
  - **Rope systems** or other fall protection systems reaching the next lower level should remain accessible at the next lower level with an unadjusted **fall line**.

##### **Training.**

Considerations to prepare candidates to successfully complete the requirement include:

- **Aid climbing** horizontally ([RCR 6.8](#)).
- **Aid climbing** equipment configurations and considerations for **aid climbing** vertically.

## 7.5. **Two-Rope System** for Edge Negotiation

7.5.1. Candidate shall construct a **two-rope system** that passes an edge obstruction creating an interior angle of less than 120 degrees.

7.5.2. Candidates shall construct **anchorage systems** for each **rope system** using two **anchorages** or **anchorage connectors** located between 1 m (3.3 ft) and 4 m (13.1 ft) apart.

### Perspective.

This requirement builds on the **two-rope system** requirement ([RCR 6.10](#)) by expanding the allowable **anchorage** separation and adding an edge obstruction. This requirement simulates rope access work environments where available **anchorages** are spaced farther from a desired **fall line** and no intermediate **anchorages** are available to avoid an edge obstruction.

**Anchorage system** construction considerations provided in the perspective for the **two-rope system** requirement ([RCR 6.10](#)) can be applied to larger **anchorage** separation. Additional considerations should include:

- Access to and egress and rescue from **two-rope systems**.
- Proximity of **anchorages** to an edge.
- Elongation of **anchorage systems**.

Considerations for rope and edge protection are found in the perspective provided for Edge Negotiation with Rope Protection ([RCR 6.3](#)).

See Section 12 of *Safe Practices for Rope Access Work* for more information.

### Performance. ([RCR 7.2](#))

Candidates are expected to:

- Construct **anchorage systems** that accommodate the distance between **anchorage systems** and an edge obstruction in accordance with *Safe Practices for Rope Access Work*.
  - Evaluators may designate a **fall line** or direction of applied force.
  - Evaluators may designate a simulated edge for constructing the load sharing **anchorage system** if an edge is not available provided that candidates construct a **two-rope system** over an edge as a separate exercise.
- Construct a **two-rope system** suitable for negotiating an edge obstruction.
- Incorporate suitable rope or edge protection.
- Demonstrate use of the **two-rope system** within a **rope access system**.
  - Evaluators may ask candidates or other individuals to use the constructed **rope access system**.

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Review of Section 12 of *Safe Practices for Rope Access Work*.
- **Two-rope system** construction ([RCR 6.10](#)).
- Considerations for constructing **anchorage systems** with larger **anchorage** separation.
- Considerations for rope and edge protection ([RCR 6.3](#)).
- Construction, inspection, operation, and analysis ([RCR 7.3](#)) of **two-rope systems**.

## 7.6. Retrievable *Two-Rope System*

7.6.1. Candidate shall construct a retrievable *two-rope system*.

7.6.2. Candidate shall descend at least 2 m (6.6 ft) on the *two-rope system*.

7.6.3. Candidate shall retrieve the *two-rope system* without returning to the *anchorages*.

### Perspective.

Retrievable *two-rope systems* are typically used when access to *anchorages* is limited or impractical during the construction or removal of *two-rope systems*.

Considerations for retrievable *two-rope systems* should include:

- Accessibility of *anchorages*.
- Connector loading.
- Rope or edge protection ([RCR 6.3](#)).
- Distinguishing the *two-rope system* and the method of retrieval prior to use.

### Performance. ([RCR 7.2](#))

Candidates are expected to:

- Construct a retrievable *two-rope system* appropriate to the evaluation environment.
  - Candidates may access the *anchorages* during the construction of the retrievable *two-rope system*.
  - Candidates may incorporate rope or edge protection as appropriate.
- Visibly distinguish between the *two-rope system* and the method of retrieval prior to use.
- Demonstrate use of the retrievable *two-rope system* within a *rope access system*.
  - Evaluators may ask candidates to ascend the *two-rope system* if the retrievable *two-rope system* is constructed while the candidates are not located at the *anchorages*.
- Retrieve the *two-rope system*.

This requirement may be combined with others, such as *aid climbing* horizontally ([RCR 6.8](#)) or vertically ([RCR 7.4](#)).

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Considerations for retrievable *rope systems*., including considerations for rope and edge protection ([RCR 6.3](#)).
- Methods for constructing retrievable *rope systems*.

## 7.7. Raising and Lowering: Suspended Candidate

7.7.1. While suspended by a **rope access system**, candidate shall construct and operate a system to raise and lower an individual or load at least 3 m (10 ft) along an unobstructed **fall line**.

### Perspective.

This requirement builds on the raising and lowering system requirement ([RCR 6.11](#)) by adding operation of a raising and lowering system while suspended by a **rope access system**. Considerations provided in the perspective for this earlier requirement can be applied to operating raising and lowering systems while in suspension. Additional considerations should include:

- Separation of the raising and lowering system from an individual's **rope access system**.
- Proximity of an individual's **rope access system** and raising and lowering system.
- Adjustability of an individual's **rope access system**.
- Efficiency of the raising and lowering system.

### Performance. ([RCR 7.2](#))

Candidates are expected to:

- Access or construct **anchorage systems** while suspended from a **rope access system**.
  - Candidates may connect ropes to the load prior to accessing the **anchorage systems**.
- Separate their **rope access system** from equipment required to complete the raising and lowering exercise.
  - Candidates may use the same **anchorage systems** for the raising and lowering systems and their **rope access system**.
- Construct a raising and lowering system for a load.
- Raise and lower the load in a controlled manner while maintaining **limited free fall potential**.
  - Candidates may construct a raising system with the **main rope** or may use a separate raising system.
- Use equipment in a manner consistent with fundamental maneuvers ([RCR 6.2](#)).
  - Candidates may route ropes through connectors at the **anchorage system** as needed.

This requirement may be combined with others, such as **aid climbing** ([RCR 6.8](#)), Raising and Lowering: Suspended Load ([RCR 7.8](#)), or Cross-Haul ([RCR 7.9](#)).

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Raising and lowering systems ([RCR 6.11](#)).
- Raising and lowering from a platform using overhead **anchorages** and equipment along an unobstructed **fall line**.
- Raising and lowering while suspended by a **rope access system**.

## 7.8. Raising and Lowering: Suspended Load

7.8.1. While located by **the anchorage systems**, candidate shall lower an individual or load suspended by a **two-rope system** constructed with **fixed anchorage systems**, to the next lower level.

7.8.2. The individual or load shall start suspended at least 1 m (3.3 ft) above the next lower level.

### Perspective.

This requirement applies principles used in the raising and lowering system requirement ([RCR 6.11](#)) to convert **fixed anchorage systems** into a raising and lowering system. Considerations provided in the perspective for this earlier requirement can be applied to converting **fixed anchorage systems** to raising and lowering systems. Additional considerations should include:

- Location of the raising and lowering systems.
  - Raising and lowering systems should be located adjacent to but separate from the **fixed anchorage systems**.
- Direction and distance the load needs to move following conversion to a raising and lowering system.
- Location of attachments of raising and lowering systems to ropes suspending the load.
- Equipment selection to increase efficiency of operations, such as conversions between separate raising systems and those constructed using the **main rope**.

The suspended load may be attached to the **two-rope system** with:

- A **main** and **backup system**.
- A dual **main system**.
- Equipment applying tension to both ropes.

### Performance. ([RCR 7.2](#))

Candidates are expected to:

- Access **anchorage systems** used to suspend the load.
- Construct a raising and lowering system with a **fixed backup system** or **dual main system** adjacent to the ropes suspending the load.
  - Candidates may use the same **anchorage systems** for the raising and lowering systems as those suspending the load.
- Attach the raising and lowering system to the ropes suspending the load.
  - Candidates may use **ascenders** or other suitable equipment.
  - Candidates should consider the location of any obstructions when making attachments.
- Raise the load and remove connections within the **fixed anchorage systems**.
- Use equipment in a manner consistent with fundamental maneuvers ([RCR 6.2](#)) to lower the individual to the next lower level.

This requirement may be combined with others, such as **Two-Rope system** for Edge Negotiation ([RCR 7.5](#)), Raising and Lowering: Suspended Candidate ([RCR 7.7](#)), or Cross-Haul ([RCR 7.9](#)).

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Raising and lowering systems ([RCR 6.11](#)).
- Raising and lowering with **anchorages** located at the ground, a platform, and overhead.
- Using separate raising systems and those constructed using the **main rope**.
- Raising and lowering while in suspension.

## 7.9. Lateral Operations: Cross-Haul

7.9.1. Candidate shall use multiple raising and lowering systems to move an individual or load laterally from one designated location to another.

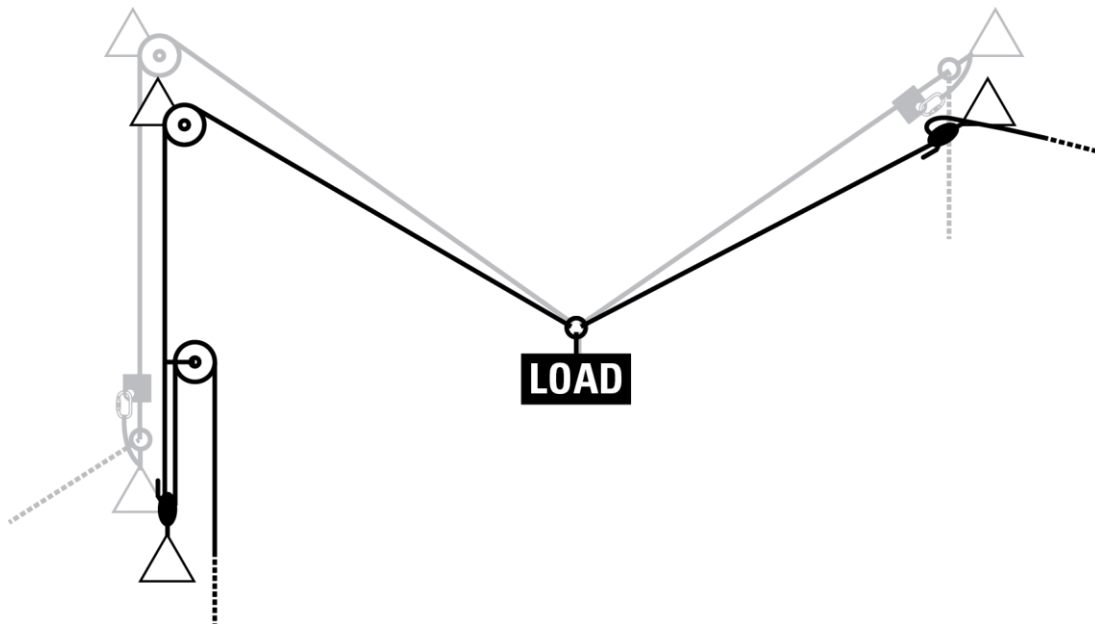
### Perspective.

This requirement applies principles used in the raising and lowering system requirement ([RCR 6.11](#)) to the lateral movement of an individual or load. Considerations provided in the perspective for this earlier requirement can be applied to cross-haul operations. Additional considerations should include:

- Selecting **anchorages** to maximize efficiency of and minimize forces during system construction and operation.
  - **Anchorage systems** should be located as high as practical.
  - **Directional anchorage systems** for the **main** and **fixed backup systems** can facilitate operation from the ground or a platform.
  - **Directional anchorage systems** should be suitable to withstand the applied forces ([RCR 7.3](#)).
- Constructing and operating systems efficiently to minimize potential **free fall** and **swing fall**.
  - Systems should be constructed to accommodate changes in direction of applied force during system operation.
  - Corresponding **main** and **fixed backup system** connections from each raising and lowering system should be made to the same suitable attachment on the load ([RCR 6.11](#)).
  - **Fixed backup systems** may be connected to the ventral attachment if the sternal attachment is not available.

An illustration of an example of a cross-haul is depicted in [Figure 4](#).

FIGURE 4: CROSS-HAUL EXAMPLE



### 7.9. Lateral Operations: Cross-Haul (continued)

#### **Performance.** ([RCR 7.2](#)).

Candidates are expected to:

- Select **anchorages** to ensure efficient operations.
  - The evaluator may designate an initial and final location of the load to be moved and any obstacle to be avoided.
  - The load may begin on the ground, a platform, suspended from a **rope access system**.
- Construct, inspect, and operate two or more raising and lowering systems in an efficient manner that minimizes applied forces, **free fall potential**, potential **swing fall**, and uncontrolled movement.
  - Candidates may begin with raising or lowering the load.
  - Candidates may direct other individuals during system construction and operation but remains responsible for completion of the requirement.
- Demonstrate at least 2 m (6.6 ft) of lateral movement of a load from one designated location to another.

This requirement may be combined with others, such as Raising and Lowering: Suspended Candidate ([RCR 7.7](#)) or Raising and Lowering: Suspended Load ([RCR 7.8](#)).

#### **Training.**

Considerations to prepare candidates to successfully complete the requirement include:

- Raising and lowering systems ([RCR 6.11](#)).
- Considerations for cross-haul operations.
- Construction, inspection, operation, and analysis ([RCR 7.3](#)) of cross-hauls.



#### 7.10. *Remote rescue system*

7.10.1. Candidate shall construct a **remote rescue system** that permits the lowering of an individual that is located anywhere along a **two-rope system**.

7.10.2. With an individual using the constructed **two-rope system** in **ascent mode** or **descent mode**, candidate shall lower the individual to the next lower level.

##### **Perspective.**

Remote rescue systems, recommended in Section 16 *Safe Practices for Rope Access Work*, can be used to increase rescue efficiency while lowering risk to other individuals. **Remote rescue systems** can be used along a single **fall line** or incorporated into **two-rope systems** used for lateral movement and positioning, such as for rope-to-rope transfers ([RCR 6.6](#)) or **re-anchors** ([RCR 6.7](#)).

Considerations for constructing and operating **remote rescue systems** should include:

- Sufficient rope and other equipment to accommodate raising or lowering.
- Ensuring each **rope system** permits raising or lowering.
- Methods to prevent inadvertent release of systems.
- Suitable protection of **two-rope systems** ([RCR 6.3](#)).
- Rope management ([RCR 6.11](#)).
- Desired location when operating the **remote rescue system**.

##### **Performance.** ([RCR 7.2](#)).

Candidates are expected to:

- Construct a **two-rope system** where either **rope system** permits lowering.
  - Candidates may incorporate equipment, such as **descenders**, or other techniques, such as secured munter hitches, to construct each **rope system**.
  - Candidates may incorporate **directional anchorages systems** or rope or edge protection as appropriate.
- Secure each system in a manner that prevents inadvertent release.
- Demonstrate use of the **remote rescue system** by lowering an individual in a controlled, efficient manner.
  - Candidates may lower each rope simultaneously or individually.
  - Candidates may adjust rope or edge protection at an edge as needed.
  - Candidates may convert one of the **rope systems** to a **fixed backup system** to increase efficiency.

This requirement may be combined with others, such as **Two-Rope System** for Edge Negotiation ([RCR 7.5](#)).

##### **Training.**

Considerations to prepare candidates to successfully complete the requirement include:

- Equipment considerations to ensure both rope systems permits lowering.
- Rope length considerations.
- Considerations to increase lowering efficiency.
- Considerations for rope and edge protection ([RCR 6.3](#)).
- Construction, inspection, operation, and analysis of **remote rescue systems**.

#### 7.11. Rescue: Same Rope Set, Rope-to-Rope Transfer

7.11.1. Candidate shall approach an individual that is in *ascent mode* on the same *two-rope system*.

7.11.2. Candidate shall transition the individual and themselves to the same *rope access system*.

7.11.3. Before reaching the next lower level, candidate shall transfer with the individual to another *two-rope system* located at least 2 m (6.6 ft) from the initial *two-rope system*.

#### Perspective.

This requirement builds on the Rescue: Adjacent Rope Set, Ascent to Descent Transition requirement ([RCR 6.12](#)) by adding the rescue skills:

- Performing a rescue from the same *two-rope system* as a rescue subject.
- Performing a rope-to-rope transfer with a rescue subject.

Techniques typically used to complete this requirement can be applied when performing rescue through other maneuvers.

The rescue subject shall be in *ascent mode* at least 3 m (9.9 ft) above the next lower level.

#### Performance. ([RCR 6.1](#)).

Candidates are expected to:

- Ensure access to the destination *two-rope system* located at least 2 m (6.6 ft) from the initial *two-rope system*.
- Access and position themselves as close to the rescue subject as is practical on the same *two-rope system*.
  - Candidate may access the rescue subject from either direction on the same *two-rope system*.
- Transition the rescue subject and themselves to the same *rope access system*.
  - Candidates may transfer the rescue subject directly from *ascent mode* to the candidate's *rope access system*.
  - Candidates may perform a transition of the rescue subject from ascent mode to descent mode to satisfy the Rescue: Adjacent Rope Set, Ascent to Descent Transition requirement ([RCR 6.12](#)).
- Perform a rope-to-rope transfer while maintaining effective *main* and *backup systems* on both *two-rope systems*.
- Descend in a controlled manner using additional friction on the brake strand of the *main rope* as appropriate .
  - Manufacturer guidance, the condition of equipment, combined weight of the candidate and rescue subject, and proximity to the next lower level should be considered when determining the need for additional friction.

This requirement is expected to be completed separately from Rescue: From Fall Arrest System ([RCR 7.12](#)).

#### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Rescue: Adjacent Rope Set, Ascent to Descent Transition requirement ([RCR 6.12](#)).
- Rope-to-rope transfers ([RCR 6.6](#)) with two *descenders*.

## 7.12. Rescue: From Fall Arrest System

- 7.12.1. While supported by a **rope access system**, candidate shall demonstrate rescuing an individual that is suspended from energy absorbing lanyards.

### Perspective.

This requirement builds on the Rescue: Adjacent Rope Set, Ascent to Descent Transition requirement ([RCR 6.12](#)) by adding the rescue skills of:

- Raising a rescue subject a larger distance while suspended from a **rope access system**.
- Applying fundamental maneuvers ([RCR 6.2](#)) to the movement of an individual.

Techniques typically used to complete this requirement can be applied to the rescue of an individual:

- Suspended from a fall arrest system or other fall protection system.
- From a rope access system where raising an individual is required for prompt rescue.

Considerations for rescue from energy absorbing lanyards should include:

- Method for rescue.
  - Rescue can be completed with a raising and lowering system or by transitioning the rescue subject and rescuer to a **rope access system** for accompanied descent.
- Connections to the rescue subject. Factors include:
  - Efficiency of rescue.
  - Desired position of rescue subject.
  - Harness suitability.

The rescue subject shall be suspended from energy absorbing lanyards with the harness attachment located at least 2 m (6.6 ft) above the next lower level.

- The harness attachment used shall be in accordance with the **presiding regulatory authority**.
- The energy absorbing lanyards should have an energy absorber that is partially deployed.
  - Energy absorbing lanyards may be simulated.
- If an individual is used as the rescue subject, the rescue subject shall be provided with:
  - An additional **backup system** or other appropriate fall protection system.
  - A means of positioning prior to a candidate accessing their location.
  - Provision for prompt rescue.
- If the rescue subject is simulated with a load, the load may begin suspended solely from energy absorbing lanyards.

### Performance. ([RCR 7.2](#)).

Candidates are expected to:

- Position themselves as close to the rescue subject as is practical with a **rope access system**.
- Construct a raising system to disconnect the rescue subject from the energy absorbing lanyards.
  - Candidates may use any method to raise the rescue subject, such as a raising and lowering system appropriate for use while in suspension ([RCR 7.7](#)) or using fundamental maneuvers ([RCR 6.2](#)).
- Maintain a minimum of two appropriate systems for the rescue subject.
  - This performance step is evaluated after a candidate initially connects to a rescue subject simulated with a load.
  - Candidates may change a rescue subject's point of suspension.
- Lower the rescue subject or descend with the rescue subject to the next lower level.
  - Manufacturer guidance, the condition of equipment, combined weight of the candidate and rescue subject, and proximity to the next lower level should be considered when determining the need for additional friction.

This requirement is expected to be completed separately from Rescue: Same Rope Set, Rope-to-Rope Transfer ([RCR 7.11](#)).

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Raising and Lowering: Suspended Candidate ([RCR 7.7](#)).
- Applying fundamental maneuvers ([RCR 6.2](#)) to raise another individual in **descent mode**.
- Rescue: Adjacent Rope Set, Ascent to Descent Transition requirement ([RCR 6.12](#))

## 8. Level 3 Technician Requirements - Supplementary Information

8.1. Candidate shall be proficient in *Level 1* and *Level 2 Technician* requirements.

### Perspective.

*Level 3 Technician* requirements build upon the foundation of knowledge, skills, and techniques of *Level 1* and *Level 2 Technicians*.

All candidates are required to complete fundamental maneuvers ([RCR 6.2](#)) and Rescue: Adjacent Rope Set, Ascent to Descent Transition ([RCR 6.12](#)). Upper-level candidates may satisfy this rescue requirement by performing an ascent-to-descent transition of a rescue subject during another rescue on the same *two-rope system*.

### Performance.

Candidates are expected to complete *Level 1* and *Level 2 Technician* requirements in accordance with their evaluation scheme.

Refer to Section 5 for more information.

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Candidate self-assessment of ability to complete requirements for *Level 1* ([RCR 6](#)) and *Level 2 Technician* ([RCR 7](#)).
- Review of documentation and refresher training of *Level 1* ([RCR 6](#)) and *Level 2 Technician* ([RCR 7](#)) requirements, as needed.

## 8.2. Performance Principles

8.2.1. Candidate shall adhere to the performance principles in [*Rope Access Certification Requirements*] Section 4 throughout the rope access evaluation.

### Perspective.

The performance principles in Section 4 of *Rope Access Certification Requirements* provide a foundation of expectations for candidates to comply with *Safe Practices for Rope Access Work* while participating in a rope access evaluation. Performance principles are the basis for grading candidates and apply during the entire rope access evaluation.

Performance principles:

- Establish the rope access evaluation as a performance-based test instrument.
  - Candidates may use equipment and techniques of their choosing to complete requirements.
- Require timely completion of requirements.
  - As stated in Section 4, evaluators may invoke time limits due to a lack of forward progress or inefficient technique.
- Require adherence to the site **access work plan**.
- Require the inspection, selection, and use of equipment in accordance with *Safe Practices for Rope Access Work*.
- Focus on minimizing **free fall potential** and potential **swing fall**.
  - Minimizing **free fall potential** is applicable in nearly all requirements, including maneuvers, operations, and rescue.
  - Minimizing potential **swing fall** is highlighted in tensioned rope systems ([RCR 8.6](#)) and rescue ([RCR 8.7](#)) requirements.

### Performance.

As part of meeting these performance principles, candidates are expected to:

- Complete requirements in a timely manner.
- Follow the site **access work plan** throughout the rope access evaluation.
- Inspect, select, and use equipment in accordance with *Safe Practices for Rope Access Work*, including:
  - Inspecting equipment before initial use and following rest breaks.
  - Connecting equipment to appropriate attachments on the harness.
  - Ensuring that equipment is threaded or loaded correctly before use.
  - Protecting equipment from damage.
- Minimize **free fall potential** and potential **swing fall** throughout the rope access evaluation.
  - Candidates may use solely a **backup system** or other fall protection system to maintain **limited free fall potential** in a **fall zone**, including when near an edge of a stable surface or climbing a structure.

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Review of *Safe Practices for Rope Access Work*.
- Review of performance principles and their relation to requirements of a candidate's testing level.
- Review of site **access work plan**.
- Review of manufacturer instructions for equipment used to complete requirements.

### 8.3. System Analysis

- 8.3.1. Candidate shall demonstrate the ability to estimate potential forces and clearance requirements within **rope access systems** used during the completion of requirements.

#### Perspective.

##### Force Analysis

This requirement builds on the system analysis requirement ([RCR 7.3](#)) of **Level 2 Technicians** by using the tables from *Safe Practices for Rope Access Work* to analyze forces within **deviations**, **re-anchors**, and tensioned **rope systems**.

Forces of tensioned **rope systems** generally increase as support provided by control ropes decreases. As a result, the highest forces of tensioned **rope systems** are generally found as a load approaches the lowest point of an operation, such as:

- The middle of the horizontal span when **anchorage systems** are located at a similar height.
- The lower **anchorage system** when the load remains above the **anchorage system**.

For self-tensioning rope systems, the forces at the **anchorage systems** generally remain constant.

##### Clearance Requirement Analysis

As with the system analysis requirement ([RCR 7.3](#)) of **Level 2 Technicians**, **Level 3 Technicians** should be able to analyze and estimate the following factors within a **rope access system**:

- **Free fall distance** factors, including **free fall potential** and **activation distance**.
- **Deceleration distance** factors, including rope stretch and energy dissipation of **backup systems**.
- Other clearance requirement factors, such as **stretch-out** and clearance margins.

#### Performance. ([RCR 8.2](#))

**Force Analysis.** Candidates are expected to:

- Estimate potential forces applied by a **backup system** when it stops a fall.
- Estimate forces within system construction and operation requirements, such as **Two-Rope System** for **Deviation** or **Re-anchor** ([RCR 8.4](#)) and Tensioned Rope System ([RCR 8.6](#)).

Candidates may be asked force analysis questions as part of the written test and during the rope access evaluation.

**Clearance Requirement Analysis.** Candidates are expected to:

- Estimate **free fall potential** within requirements.

Candidates may be asked questions related to factors affecting clearance requirements as part of the written test.

Candidates may be asked questions related to **free fall potential** during the rope access evaluation.

#### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Review of Tables 1 and 2 in *Safe Practices for Rope Access Work* and their applications in Level 3 requirements.
- Analysis of forces of system and construction requirements (e.g., [RCR 8.4](#), [RCR 8.6](#)).
- Review of factors affecting clearance requirements in [Clearance Requirement Guidelines](#).

#### 8.4. *Two-Rope System* for *Deviation* or *Re-anchor*

8.4.1. Candidate shall construct a *deviation* or *re-anchor* to adjust the *fall line* of a *two-rope system*.

8.4.2. Candidate shall negotiate the maneuver or perform a rescue from the maneuver.

##### **Perspective.**

This requirement builds on the lower-level system construction requirements ([RCR 6.10](#), [RCR 7.5](#)) by using intermediate *directional* or *fixed anchorage systems* within a *two-rope system*. Refer to *deviation* ([RCR 6.4](#)) and *re-anchor* ([RCR 6.7](#)) for applications.

**Deviation.** Construction considerations should include:

- Selecting *anchorages* to achieve a desired *fall line* adjustment.
- Constructing a *directional anchorage system* with a separation of at least 0.5 m (1.7 ft) between the *anchorage* and the connectors that the *two-rope system* passes through.
- Considering multiple *directional anchorage systems* for vertical separations of greater than 4.6 m (15 ft) between the *directional anchorage system* and the upper *anchorage systems*.
- Ensuring *anchorage systems* can accommodate changes in direction of applied force when negotiating the *deviation*.

**Re-anchor.** Construction considerations should include:

- Selecting *anchorages* to achieve a desired *fall line* adjustment.
  - *Anchorage systems* at either side of a *re-anchor* can be located at similar or different heights.
- Ensuring *anchorage systems* can accommodate changes in direction of applied force when negotiating the *re-anchor*.
- Ensuring *re-anchor* sag accommodates efficient negotiation while maintaining adequate distance from obstructions.
  - *Re-anchors* should have a minimum sag of 1 m (3.3 ft) even with no *fall line* adjustment.
- Determining suitable access options.
  - Ropes to the next lower level can be available on one or both sides of the *re-anchor*.

##### **Performance.** ([RCR 8.2](#))

Candidates are expected to:

- Construct a *deviation* or *re-anchor* suitable for completing maneuvers successfully in accordance with *deviation* ([RCR 6.4](#)) and *re-anchor* ([RCR 6.7](#)) requirements.
  - The evaluator may designate available *anchorages*, desired *fall line* adjustment, and access options.
  - *Fall line* adjustment shall not exceed 20 degrees for *deviations* or 6 m (20 ft) for *re-anchors*.
- Negotiate the constructed system as an individual or within a rescue.
  - The evaluator may designate the application for completion of the requirement.

This requirement may be combined with others, such as *Deviation* ([RCR 6.4](#)), *Re-anchor* ([RCR 6.7](#)), *Remote Rescue System* ([RCR 7.10](#)), or *Rescue: From Maneuvers* ([RCR 8.7](#)).

*Remote rescue systems* may not be used to satisfy *Rescue: From Maneuvers* ([RCR 8.7](#)) requirements.

##### **Training.**

Considerations to prepare candidates to successfully complete the requirement include:

- Review of *Deviation* ([RCR 6.4](#)) and *Re-anchor* ([RCR 6.7](#)) requirements.
- Considerations for construction of *deviations* and *re-anchors*.
- Construction, inspection, operation, and analysis of *deviations* and *re-anchors* ([RCR 8.3](#), Section 11).

## 8.5. Raising and Lowering: Knot Pass

- 8.5.1. From the ground, a platform, or while suspended from **anchorage systems**, candidate shall demonstrate raising and lowering an individual or load suspended by a **two-rope system** with knots located at a similar height in both ropes.

### Perspective.

This requirement applies principles used in lower-level raising and lowering requirements ([RCR 6.11](#), [RCR 7.7](#), [RCR 7.8](#)) to pass knots used to join ropes or isolate damaged sections of rope, which can be required during work or rescue operations. Considerations provided in the perspectives for these earlier requirements can be applied to successfully raise and lower past knots.

For completion of the requirement:

- Knots should be placed to allow at least 1.2 m (4 ft) of raising and lowering on both sides of the knots.
- Knots should be initially placed with less than 0.3 m (0.9 ft) of vertical separation on the **two-rope system**.
- A **directional anchorage system** may be used between the knots and the load.
- The load may be attached to the **two-rope system** with:
  - A **main** and **backup system**.
  - A dual **main system**.
  - Knots and equipment applying tension to both ropes.
- The load may begin on the ground, a platform, suspended from **fixed anchorage systems**, or suspended from a **remote rescue system**.

### Performance. ([RCR 8.2](#))

Candidates are expected to:

- Access **anchorage systems** used to suspend the load.
  - Candidates may not connect additional ropes to the load prior to accessing the **anchorage systems**.
  - Candidate may perform the skill from the ground, a platform, or while suspended by a **rope access system**.
- Raise and lower a load at least 1.2 m (4 ft) past knots at the **anchorage systems**.
  - Candidates may begin with raising or lowering past knots.
  - Bights isolated by knots passed during an evaluation are assumed to simulate damaged rope sections and may not be incorporated within a **main** or **backup system**.
  - Candidates shall not be required to raise or lower knots past a **directional anchorage system**.

This requirement may be combined with others, such as Cross-Haul ([RCR 7.9](#)) or **Remote Rescue System** ([RCR 7.10](#)).

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Review of skills required for completion of lower-level raising and lowering requirements ([RCR 6.11](#), [RCR 7.7](#), [RCR 7.8](#)).
- Review of skills required for applying fundamental maneuvers ([RCR 6.2](#)) to pass knots.
- Raising and lowering past knots using **anchorage systems** located at the ground, a platform, and overhead.



## 8.6. Lateral Operations: Tensioned Rope System

8.6.1. Candidate shall construct and use a tensioned **rope system** to move an individual or load laterally from one designated location to another.

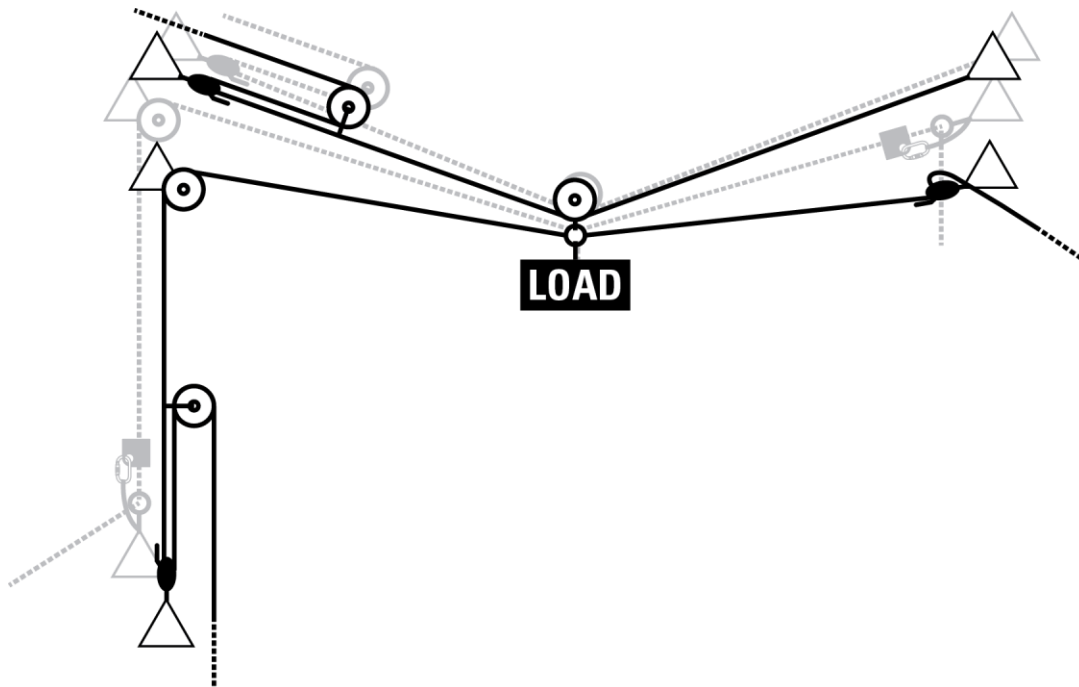
### Perspective.

This requirement applies raising and lowering system ([RCR 6.11](#)) principles for lateral movement where cross-haul ([RCR 7.9](#)) operations are impractical. Considerations provided in the perspectives for these earlier requirements can be applied to tensioned **rope system** operations. Additional considerations should include:

- Selecting **anchorages** to maximize efficiency of and minimize forces during system construction and operation.
  - **Anchorage systems** should be located as high as practical.
  - When using **anchorages** at differing heights and height is limited, selecting a lower **anchorage** farther from an obstacle for the tensioned **rope system** can reduce forces required to maintain height during lateral movement.
  - **Directional anchorage systems** within tensioned **rope systems** should be used only when suitable and required for efficient system construction and operation.
  - The length of connections between loads and tensioned **rope systems** should be minimized.
  - Loads should be maintained as low a height as is practical for efficient lateral movement.
- Constructing and operating systems to minimize potential **free fall**, **swing fall**, and uncontrolled movement.
  - Single tensioned **rope systems** can be used if control ropes are located and operated effectively.
  - Double tensioned **rope systems** can reduce tensioned **rope system** sag and increase control rope placement options.
  - Self-tensioning **rope systems** can typically be used when required lateral movement is less than 50% of the height of upper **anchorage systems**.
  - Reeving tensioned **rope systems** can be used when raising and lowering is required without adjusting the tension of tensioned **rope systems**.
  - Control ropes should be located to efficiently move a load along a **tensioned rope system**.
  - Multiple control ropes should be considered if control rope failure would result in uncontrolled movement along a tensioned **rope system**.

An illustration representing examples of both single and double tensioned rope systems is shown in [Figure 5](#). Systems depicted with dashed lines represent both non-exhaustive and optional considerations for system construction to minimize potential **free fall**, **swing fall**, and uncontrolled movement.

FIGURE 5: SINGLE AND DOUBLE TENSIONED ROPE SYSTEM EXAMPLE

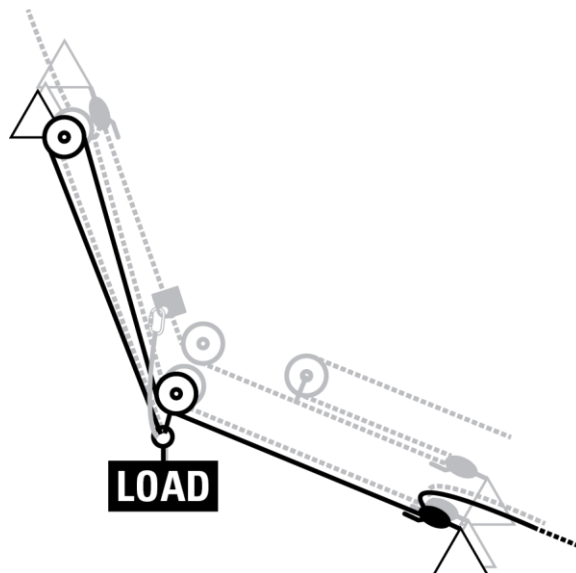


## 8.6. Lateral Operations: Tensioned Rope System (continued)

### Perspective. (continued)

An illustration representing an example of a self-tensioning rope system is shown in Figure 6. Systems depicted with dashed lines represent both non-exhaustive and optional considerations for system construction to minimize potential *free fall*, *swing fall*, and uncontrolled movement.

FIGURE 6: SELF-TENSIONING ROPE SYSTEM EXAMPLE



### Performance. (RCR 8.2)

Candidates are expected to:

- Select **anchorages** to ensure efficient operations.
  - The load may begin or end on the ground, a platform, or suspended from a **rope access system**.
  - The evaluator may designate an initial and final location of the load, and any obstacle to be avoided.
  - The evaluator may designate available **anchorages**.
- Construct, inspect, and operate a tensioned **rope system** in an efficient manner that minimizes applied forces, *free fall potential*, potential *swing fall*, and uncontrolled movement.
  - Candidates may use any tensioned **rope system** configuration.
  - Reeving tensioned **rope systems** shall not be required for completion of an assigned task.
  - Candidates may direct other individuals during system construction and operation but remains responsible for completion of the requirement.
- Demonstrate at least 3 m (9.9 ft) of lateral movement of a load along a tensioned **rope system** from one designated location to another.

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Review skills required for completion of other operations ([RCR 6.11](#), [RCR 7.7](#), [RCR 7.8](#), [RCR 7.9](#), [RCR 8.5](#)).
- Considerations for construction and operations using tensioned **rope systems**.
- Construction, inspection, operation, and analysis ([RCR 8.3](#)) of tensioned **rope systems**.

## 8.7. Rescue: From Maneuvers

8.7.1. Candidate shall perform rescue of an individual from two of the following maneuvers:

8.7.1.1. **Deviation.**

8.7.1.2. Knot Pass.

8.7.1.3. Rope-to-Rope Transfer.

8.7.1.4. **Re-anchor.**

8.7.1.5. **Aid Climbing.**

8.7.2. The individual shall be located in a position expected when the maneuver is being completed successfully.

### Perspective.

This requirement builds upon skills required for completion of lower-level rescues ([RCR 6.12](#), [RCR 7.11](#), [RCR 7.12](#)) by requiring a candidate to assess the location of a rescue subject and use these skills to perform prompt rescue. As *Safe Practices for Rope Access Work* requires that work team members have appropriate training to conduct assigned rope access work, rescue subjects in the evaluation simulate individuals meeting the performance expectations of lower-level maneuvers:

- **Deviation** ([RCR 6.4](#)).
  - Rescue subjects may be in **ascent** or **descent mode** above the **directional anchorage system** and located at a height no lower than 0.6 m (2 ft) below the height of connector of the **directional anchorage system**.
  - The rescue shall be completed while maintaining the **fall line** adjustment of the **directional anchorage system**.
- Knot Pass ([RCR 6.5](#)).
  - Rescue subjects may be in **ascent** or **descent mode** any distance above the knots.
  - After passing the knots, the original **two-rope system** shall be used to reach the next lower level.
- Rope-to-Rope Transfer. ([RCR 6.6](#))
  - Rescue subjects may be located anywhere within the maneuver where the interior angle created by **main ropes** used for lateral movement is less than 120 degrees.
  - The evaluator may designate a location for initiating and completing the rescue.
- **Re-anchor** ([RCR 6.7](#)).
  - Rescue subjects may be located on either side of the re-anchor or anywhere within the maneuver where a minimum of 0.3m(1 ft) of rope slack remains between equipment connecting the rescue subject to the **main ropes** used for lateral movement and the interior angle created by these **main ropes** is less than 120 degrees.
  - The evaluator may designate a location for initiating and completing the rescue.
- **Aid Climbing** ([RCR 6.8](#), [RCR 7.4](#)).
  - Rescue subjects may be **aid climbing** horizontally or vertically and suspended within reach of an **anchorage system**.
  - Candidates may select the **aid climbing** configuration used by the rescue subject.
  - Candidates may construct **two-rope systems** to perform rescue from **aid climbing**.
  - The evaluator may designate a location for initiating and completing the rescue.

### Performance. ([RCR 8.2](#))

Candidates are expected to:

- Complete two separate rescues without the assistance or use of **remote rescue systems**.
  - The evaluator may designate the initial location of the rescue subject in accordance with the allowance provided in the perspective above.
  - Candidates may use equipment, including rope, of their choosing to complete rescues.

### Training.

Considerations to prepare candidates to successfully complete the requirement include:

- Review of skills required for completion of lower-level rescues ([RCR 6.12](#), [RCR 7.11](#), [RCR 7.12](#)).
- Applications of rope-to-rope transfers to negotiate obstacles ([RCR 6.6](#), [RCR 7.11](#)).
- Applying fundamental maneuvers ([RCR 6.2](#)) to an individual within a maneuver involving lateral movement.
- Analysis of rescue subject location to determine skills required to perform prompt rescue.

## 9. Direct Entry Program

### 9.1. General

- 9.1.1. SPRAT's Direct Entry program allows individuals who have obtained rope access experience outside of the SPRAT certification program to be evaluated for an upper-level SPRAT certification without consecutive advancement through SPRAT's certification levels.
- 9.1.2. Individuals with an authorized current or expired rope access certification from a recognized organization listed in [Appendix 1](#) are eligible to apply for Evaluations Committee approval to participate in the Direct Entry program.
- 9.1.3. Other organizations may be considered following a review of their rope access certification requirements.

### 9.2. Level 2 Direct Entry Eligibility

- 9.2.1. Individuals with a Level 2 or higher certification in a recognized organization are eligible if they have:
  - 9.2.1.1. Obtained a minimum of 500 hours of rope access experience.
- 9.2.2. Individuals with a Level 1 certification in a recognized organization are eligible if they have:
  - 9.2.2.1. Held their Level 1 certification for a minimum of 6 months.
  - 9.2.2.2. Obtained a minimum of 500 hours of rope access experience with their Level 1 certification.

### 9.3. Level 3 Direct Entry Eligibility

- 9.3.1. Individuals with a Level 3 certification in a recognized organization are eligible if they have:
  - 9.3.1.1. Obtained a minimum of 1000 hours of rope access experience.
- 9.3.2. Individuals with a Level 2 certification in a recognized organization are eligible if they have:
  - 9.3.2.1. Held their Level 2 certification for a minimum of 6 months.
  - 9.3.2.2. Obtained a minimum of 500 hours of rope access experience with their Level 2 certification.
  - 9.3.2.3. Obtained a minimum of 1000 hours of rope access experience.

### 9.4. Application Process

- 9.4.1. Applications shall include:
  - 9.4.1.1. Evidence supporting eligibility for the desired level of certification.
  - 9.4.1.2. Experience documentation, in accordance with SPRAT's *Safe Practices for Rope Access Work*.
  - 9.4.1.3. Two professional references.
- 9.4.2. Completed Direct Entry applications and associated fees should be submitted to [info@sprat.org](mailto:info@sprat.org) no less than five weeks in advance of the scheduled rope access evaluation.
  - 9.4.2.1. Applications may be submitted by the individual, the Evaluation Session Host, or training provider.
- 9.4.3. Following review by the Evaluations Committee, notice of an application's approval or rejection is sent by the SPRAT Office to the applicant, Evaluation Session Host, or evaluator.
  - 9.4.3.1. Notice of approval, as well as experience documentation, shall be presented to the evaluator at the beginning of the rope access evaluation.
  - 9.4.3.2. Consideration for Direct Entry shall not be given to candidates without this notice of approval.
    - 9.4.3.2.1. Additional confirmation can be provided by the SPRAT Office upon request.
- 9.4.4. Approval to test as a Direct Entry candidate is valid for two attempts.

## 10. Site Requirements and Recommendations

### 10.1. General

10.1.1. All site requirements, including [site station requirements](#) and [site equipment requirements](#) shall be met for a rope access evaluation to proceed.

10.1.1.1. Evaluation Session Hosts should consult SPRAT's [Evaluation Session Host Preparation Checklist](#).

10.1.1.2. Site recommendations should be met or exceeded to increase rope access evaluation efficiency.

10.1.1.3. If any requirement is not met, an evaluator has the right to refuse to conduct a rope access evaluation.

10.1.1.3.1. The Evaluation Session Host shall provide proof of addressing any requirement deficiencies to the SPRAT Office prior to scheduling another rope access evaluation at that location.

10.1.2. The site shall be suitable to administer the rope access evaluation and the written test.

10.1.2.1. Equipment used during a rope access evaluation shall meet the requirements of *Safe Practices for Rope Access Work* and the *presiding regulatory authority*.

10.1.2.2. Completion of requirements shall require no major adjustments during the rope access evaluation.

10.1.2.2.1. The site should have a floor area of at least 130 m<sup>2</sup> (1400 ft<sup>2</sup>).

10.1.2.3. [Current](#) SPRAT documentation shall be available during the rope access evaluation.

10.1.2.4. Manufacturer instructions of equipment used during the rope access evaluation shall be available.

10.1.2.5. A [poster](#) depicting candidates' evaluation schemes in accordance with Section 5 should be provided.

10.1.2.6. A white board or blank paper and implements shall be provided.

10.1.2.7. The site shall have suitable locations to observe candidates.

10.1.2.7.1. Vertical separation shall not exceed 15 m (49 ft) between any location required for the completion of requirements and either the next lower level or the ground.

### 10.2. Site Safety Requirements

10.2.1. An *access work plan* in accordance with *Safe Practices for Rope Access Work* shall be provided.

10.2.2. *Hazard* and *fall zones* shall be identified and marked in accordance with *Safe Practices for Rope Access Work*.

10.2.3. Candidate emergency contact information shall be available.

10.2.4. Provision shall be made to prevent conflicting activities during the rope access evaluation.

10.2.5. Provision shall be made to ensure prompt rescue.

10.2.6. A suitable first aid kit and fire extinguisher shall be readily available.

10.2.7. Emergency egress signage and lighting should be provided as appropriate.

### 10.3. Site Environment

10.3.1. The site shall have appropriate noise and lighting levels.

10.3.1.1. Noise levels should be below 85dBA per eight-hour period.

10.3.1.2. Lighting levels should be between 300 and 800 lux.

10.3.2. The site should be protected from adverse weather.

10.3.3. The site should have a regulated temperature between 7°C (45°F) and 38°C (100°F).

10.3.4. The site should have ventilation to ensure a minimum of four air changes per hour.

### 10.4. Platform

10.4.1. The site shall have a platform at least 2.5 m (8.3 ft) above the next lower level.

10.4.2. The platform should be accessible without the use of fall protection systems.

10.4.3. At least one platform that accommodates at least four people shall be available.

10.4.3.1. A platform or platforms that accommodate a total of at least eight people are recommended.

10.4.4. The platform should accommodate a **fall zone** extending a minimum of 3 m (9.9 ft) along one edge.

#### 10.5. **Anchorage Systems**

10.5.1. The site shall accommodate **fixed anchorage systems** that allow for the uninterrupted ascent and descent of at least 5 m (16.5 ft) on a **two-rope system**.

10.5.2. **Anchorage systems** shall meet the requirements of *Safe Practices for Rope Access Work*.

10.5.2.1. A documented inspection report prepared by a professional structural engineer appropriate to the **presiding regulatory authority** of the site is recommended.

10.5.3. **Anchorage systems** should be located to accommodate clearance requirements of fall protection systems.

10.5.3.1. During the performance of certification requirements, no additional protection is required where the required clearance is lower than the available clearance.

### 11. Site Station Requirements and Recommendations

#### 11.1. General

11.1.1. Site stations to complete certification requirements are categorized for maneuvers, system construction, system operation, and for rescue.

11.1.1.1. As site stations can be used to complete multiple requirements, not all certification requirements directly correspond to a station.

11.1.2. Site stations within each category shall be readily available, distinct, and able to be used simultaneously.

11.1.2.1. Site stations between categories may overlap.

11.1.3. One of each site station shall be available per four candidates.

11.1.3.1. A minimum of four of each site station is recommended.

#### 11.2. Maneuver Stations

##### 11.2.1. Edge Negotiation with Rope Protection ([RCR 6.3](#))

11.2.1.1. An edge negotiation station consists of a **two-rope system** with rope or edge protection passing over an edge obstruction that creates an interior angle of less than 120 degrees.

11.2.1.2. Edge negotiation stations shall allow the candidate to safely transition to and from the **rope access system**, by moving out of a **fall zone**, or by using another suitable fall protection system.

##### 11.2.2. **Deviation** ([RCR 6.4](#))

11.2.2.1. Deviations should be as close to 20 degrees as possible.

11.2.2.2. **Directional anchorage systems** should have a separation of at least 0.5 m (1.7 ft) between the **anchorage** and the connectors that the **two-rope system** passes through.

11.2.2.3. The height of the **directional anchorage system** should be sufficient so it cannot be reached from the ground ( $\geq 3$  m).

11.2.2.4. The upper **anchorage systems** should be sufficiently higher than the **directional anchorage system** to allow candidates to continue ascending before transitioning between **ascent** and **descent modes**.

11.2.2.5. Multiple **directional anchorage systems** should be considered for vertical separations of greater than 4.6 m (15 ft) between the **directional anchorage system** and the upper **anchorage systems**.

##### 11.2.3. Rope-to-rope transfer ([RCR 6.6](#))

11.2.3.1. A rope-to-rope transfer station consists of a pair of **two-rope systems**, separated between 2 m (6.6 ft) and 6 m (20 ft).

11.2.3.2. Rope-to-rope transfer stations shall be capable of generating more than a 30-degree angle from the **fall line** of each of the **anchorage systems** when at the midpoint of the maneuver.

11.2.3.3. The required interior angle to complete a rope-to-rope transfer should not exceed 120 degrees.

#### 11.2.4. *Re-anchor* (RCR 6.7)

11.2.4.1. A re-anchor station consists of a **two-rope system** with intermediate, **fixed anchorage systems** that adjust the **fall line** between 2 m (6.6 ft) and 6 m (20 ft).

11.2.4.1.1. **Anchorage systems** at either side of a **re-anchor** may be located at similar or different heights.

11.2.4.2. **Re-anchors** should have a sag at least as deep as half the horizontal span, but not less than 1 m (3.3 ft).

11.2.4.3. The lowest point of the **re-anchor** should be more than 2 m (6.6 ft) above the next lower level.

11.2.4.4. Ropes reaching a lower level may be present on only one side or on both sides of the **re-anchor**.

#### 11.2.5. Horizontal *aid climbing* (RCR 6.8)

11.2.5.1. The horizontal span of a horizontal aid climbing station shall be at least 3 m (9.9 ft).

11.2.5.2. Both **fixed anchorage system** and movable **anchorage system** stations should be available for horizontal **aid climbing**.

11.2.5.2.1. **Fixed anchorage system** spacing should be between 0.3 m (1 ft) and 1 m (3.2 ft).

11.2.5.2.2. Aid climbing stations with movable **anchorage systems** should have at least one obstruction along its span.

11.2.5.2.3. Three movable **anchorage systems** to facilitate passing obstructions should be available.

#### 11.2.6. Vertical *aid climbing* (RCR 7.4)

11.2.6.1. Vertical **aid climbing** stations shall be no farther than 30 degrees from vertical.

11.2.6.2. **Anchorage systems** shall be spaced no farther apart than 0.45 m (1.5 ft) over a vertical distance of at least 3 m (9.9 ft).

11.2.6.3. Vertical aid climbing stations are only required for upper-level candidates.

### 11.3. System Construction Stations

#### 11.3.1. *Two-rope system* Construction (RCR 6.10)

11.3.1.1. **Anchorage**s shall be available to construct a **two-rope system** using a single **anchorage** and two **anchorage**s or **anchorage connectors** located less than 1 m (3.3 ft) apart.

11.3.1.2. **Anchorage**s should permit ascent and descent on the **two-rope system** along an unobstructed **fall line**.

#### 11.3.2. *Two-rope system* for Edge Negotiation (RCR 7.5)

11.3.2.1. **Anchorage**s separated by 1 m (3.3 ft) and 4 m (13.1 ft) shall be available to construct a **two-rope system** with a designated **fall line** that passes over a nearby edge obstruction.

11.3.2.2. **Anchorage**s shall be located a sufficient distance from the edge obstruction to accommodate accessing the **two-rope system** above the edge obstruction.

11.3.2.3. **Anchorage**s should permit ascent and descent on the **two-rope system** below the edge obstruction.

#### 11.3.3. Retrievable *two-rope system* (RCR 7.6)

11.3.3.1. **Anchorage**s shall be available to construct a retrievable **two-rope system** and accommodate descent of at least 3 m (9.9 ft) on the **two-rope system**.

#### 11.3.4. *Deviation* and *Re-anchor* Construction (RCR 8.4)

11.3.4.1. **Anchorage**s shall be available to construct **deviations** and **re-anchors** meeting the requirements of Sections 11.2.2 and 11.2.4, respectively.



#### 11.4. System Operation Stations

##### 11.4.1. Platform Raising and Lowering ([RCR 6.11](#), [RCR 7.8](#), [RCR 7.9](#), [RCR 8.5](#))

11.4.1.1. **Anchorage** or **anchorage systems** shall be available to accommodate construction and operation of systems from the ground or platform.

11.4.1.2. **Anchorage** or **anchorage systems** should accommodate systems operated with equipment located at the ground, platform, and overhead.

11.4.1.3. **Anchorage systems** should accommodate both vertical and lateral movements of a load.

##### 11.4.2. Suspended Raising and Lowering ([RCR 7.7](#), [RCR 7.9](#), [RCR 8.5](#))

11.4.2.1. **Anchorage** or **anchorage systems** shall be available to accommodate construction and operation of systems while suspended by a **rope access system**.

11.4.2.2. **Anchorage systems** should accommodate both vertical and lateral movements of a load.

##### 11.4.3. Tensioned **Rope System** ([RCR 8.6](#))

11.4.3.1. **Anchorage** shall be available to construct and operate tensioned **rope systems** that accommodate a minimum of 3 m (9.9 ft) of lateral movement.

#### 11.5. Rescue Stations

##### 11.5.1. Rescue from Adjacent Rope Set ([RCR 6.12](#))

11.5.1.1. An adjacent rope set rescue station consists of adjacent **two-rope systems** separated by no more than 1 m (3.3 ft).

11.5.1.2. An adjacent rope set rescue station shall allow descent of at least 3 m (9.9 ft).

##### 11.5.2. Rescue from Fall Arrest System

11.5.2.1. A fall arrest rescue station consists of:

11.5.2.1.1. An **anchorage** to accommodate suspension of an individual from an energy absorbing lanyard with the harness attachment located at least 2 m (6.6 ft) above the next lower level.

11.5.2.1.2. A **two-rope system** separated by no more than 1 m (3.3 ft) from the individual suspended from energy absorbing lanyards.

## 12. Site Equipment Requirements and Recommendations

#### 12.1. Candidate Individual Equipment

12.1.1. Each candidate shall be equipped individually, at a minimum, with the following equipment:

12.1.1.1. Helmet.

12.1.1.2. Harness.

12.1.1.3. Chest **ascender**.

12.1.1.4. Hand **ascender** with lanyard and foot loop.

12.1.1.5. Two backup devices with connecting equipment.

12.1.1.5.1. One backup device per candidate shall be suitable for completing rescue requirements.

12.1.1.6. **Descender**.

12.1.1.7. Sufficient **carabiners** to accommodate individual equipment.

12.1.1.8. Protective equipment required by the site **access work plan**.

12.1.2. Individual equipment available in multiple sizes should be available to accommodate candidates.

12.1.2.1. A minimum of 16 helmets is recommended.

12.1.2.2. A minimum of 16 harnesses with affixed chest ascenders is recommended.



## 12.2. Shared Equipment

12.2.1. Four additional backup devices with connecting equipment shall be available.

12.2.1.1. One additional backup device with connecting equipment per candidate is recommended.

12.2.2. Four additional **descenders** shall be available.

12.2.2.1. One additional **descender** per candidate is recommended.

12.2.3. Sufficient hardware and other suitable equipment to accommodate requirements shall be available.

12.2.3.1. At least 40 **carabiners** should be available.

12.2.3.2. At least 16 **ascenders** in addition to individual equipment should be available.

12.2.3.3. At least 16 pulleys should be available.

12.2.3.4. At least 4 rigging plates or rings should be available.

12.2.4. Ropes that accommodate the needs of the site to complete requirements shall be available.

12.2.4.1. A minimum of eight ropes with length of approximately 3 m (10 ft) should be available.

12.2.4.2. A minimum of eight ropes with length between 7.5 m (25 ft) and 15 m (50 ft) should be available.

12.2.4.3. A minimum of eight ropes with length of between 15 m (50 ft) and 30 m (99 ft) should be available.

12.2.5. Sufficient slings and other **anchorage connectors** to accommodate requirements shall be available.

12.2.5.1. At least 16 slings should be available.

12.2.6. One mass of  $\geq 45$  kg (100 lbs) per four candidates shall be available.

12.2.6.1. A minimum of four masses of  $\geq 45$  kg (100 lbs) is recommended.

12.2.6.2. One mass of  $\geq 70$  kg (155 lbs) for completing rescue requirements per four candidates is recommended.

12.2.6.2.1. Masses used in rescue must incorporate or simulate a harness suitable for rope access.

12.2.6.3. Modular weights may be used to accommodate requirements and recommendations.

12.2.7. One energy absorbing lanyard for use in completing the Rescue: From Fall Arrest requirement ([RCR 7.12](#)) per four candidates shall be available.

12.2.7.1. The energy absorbing lanyards should have an energy absorber that is partially deployed.

12.2.7.2. Energy absorbing lanyards may be simulated.

12.3. Additional shared equipment should be provided, as appropriate, for a site, such as:

12.3.1. Work seats.

12.3.2. Energy absorbing lanyards or other fall protection systems.

12.3.3. Adjustable positioning lanyards

## **Appendix 1. Recognized Rope Access Certifications for Direct Entry Program**

A.1.1. The following organizations have been recognized by the Evaluations Committee as eligible for SPRAT's Direct Entry Program:

- A.1.1.1. Argentine Association of Technicians in Vertical Works and Rope Access (AATTVAC).
- A.1.1.2. Asociación Nacional de Empresas de Trabajos Verticales (ANETVA).
- A.1.1.3. Australian Rope Access Association (ARAA).
- A.1.1.4. Développement et Promotion des Métiers sur Cordes - Certificate of Professional Qualification (CPQ).
- A.1.1.5. German Association for Rope Access (FISAT).
- A.1.1.6. Industrial Rope Access Trade Association (IRATA).
- A.1.1.7. IRATA Brasil *Associação Comercial de Acesso por Cordas Industrial* (IRATA Brasil).
- A.1.1.8. Norwegian Association for Rope Access (SOFT).
- A.1.1.9. Schweizerischer Höhenarbeiten- und Rigging-Verband (SHRV).
- A.1.1.10. Singapore Rope Access Association (SRAA).

A.1.2. As stated in Section 9, other organizations may be considered following a review of their rope access certification requirements.