

The Association for Certified Rope Access Building Assessment
Technicians

ROPE ACCESS STANDARDS FOR PITCHED ROOFING SYSTEMS

Fifth Edition



Association for
Certified
Rope Access
Building Assessment
Technicians

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Who We Are

The Association for Certified Ropes Accessed Building Assessment Technicians (ACRABAT) was initiated in 2008 out of the deliberate actions of a handful of Property Claims Adjusters with growing concerns about the aggressive trends for pitched roofing systems within the modern housing industry.

What We Do

ACRABAT is a professional organization dedicated to reducing the threat of personal injury for pitched roof system rope access workers by promoting uniformity standards for practitioner skills and knowledge.

ACRABAT Mission Statement

ACRABAT seeks to solidify professional consensus on pitched roof inspection specific rope access guidelines for front line workers, the instructors that train them and the operations administrators that create and maintain such programs.

ACRABAT Vision Statement

Worldwide recognition as the most accurate and complete informational resource for the implementation of safe pitched roof system rope access programs.

Warning

The information contained within this document represents guidelines that are the result of a great deal of time, research and practice. These guidelines are intended for use by professionals within the Pitched Roof Rope Access Trades Industries who have specific experience and training in the process of Rope Access. Improper interpretation and/or misuse of these guidelines may result in incident, injury or fatality. No liability for loss or damage, direct or consequential, to readers or others from the use of standards contained herein will be assumed by ACRABAT, its administration, members, partners, or contributors.

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SCOPE, PURPOSE, EXCEPTIONS, AND INTERPRETATIONS

Scope:

This document initiates and sets forth acceptable practice for pitched roofing specific rope access, acceptable practice for the companies that employ those who are required to access pitched roofing systems and acceptable practice for those who provide pitched roofing rope access training.

PURPOSE:

This document is intended to serve as:

- an informational guide on critical knowledge, skills and components necessary for pitched roof rope access workers to recognize and effectively mitigate personal risk that operates within the frameworks of SPRAT's "Safe Practices for Rope Access Work".
- an educational platform for program administrators to capitalize on successful risk management training processes and avoid the hazards of building their own program through the process of trial and error.
- a measurable record of technical structure and competencies required to improve and refine the practice or pitched roof rope access training.
- a promotion for effective fall protection program design and the delivery of information within the outline of consistently sound technical practice.
- a living document that will receive continuous review and annual revisions to incorporate information on emerging products and process in order to maintain the highest level of effectiveness and integrity for those it serves.

EXCEPTIONS:

This document may contain information that differs from various regulatory agencies.

INTERPRETATIONS:

Interpretations of these standards are available on request.

ACRABAT DEFINITIONS

Anchor – a critical component of support within a rope access system utilized as a secure point to attach a lifeline.

Anchor, fixed – a secure point or combination of load sharing points fixed to the earth or structures that meets the strength required for rope access work.

Anchor, load sharing – several anchors connected together to make a single anchor that meets the strength required for rope access work. (*SPRAT “Safe Practices for Rope Access Work” 2.4.4*)

Anchor, primary – the anchor that is currently providing resistance and potential fall arrest safety to the rope access worker.

Anchor, weight based - a secure point of attachment consisting of weight encapsulated / contained / securely attached to by a load rated system of connectors and/or nylon cordage that meets the strength required for rope access work on a pitched roofing surface.

Active Anchor – the anchor(s) that the rope access worker is currently using to secure their position along a lifeline.

Ascender – a belay device best suited for climbing upward by gripping a rope when loaded in one direction and sliding freely in the opposite direction when pushed forward.

Authorized Person – an individual who has the approval of their employer to perform duties at a location where they will be exposed to high angle fall hazards. (*ANSI Fall Protection Code Definition 2.11*)

Belay – the act of securing a worker to a lifeline for the purpose of fall protection.

Attended Belay – a belay system consisting of a moving lifeline that passes through a belay device operated by a second person.

Self-Belay – a belay system operated by the climber that allows for mobility along a fixed lifeline.

Belay Device – a critical component (equipment or hardware) of a rope access system. A piece of equipment designed to secure a climber to a lifeline.

Belay Transfer – the act of transitioning from one rope access anchor system to another. Most commonly known in pitched roof rope access as the action performed by an ascending climber to re-orient their belay system to a new anchor while transitioning over a ridge cap in order to descend down a separate slope.

Body Harness – a nylon based system of buckles, straps and attachment points that encapsulate both the upper and lower torso. Body harness’s should be designed for both the comfort of a suspended worker in mind and for the even distribution of arresting forces across the worker’s chest, shoulders, waist and thighs.

Carabiner – a form of connector consisting of a complete loop with a spring-loaded entry gate. (*SPRAT “Safe Practices for Rope Access Work” 2.8*)

Carabiner, locking – a carabiner with a mechanism that reduces the possibility of a gate being opened inadvertently. (*SPRAT “Safe Practices for Rope Access Work” 2.9*)

Competent Person – an individual designated by the employer to be responsible for the immediate supervision, implementation and monitoring of the employer’s managed fall protection program who, through training and knowledge, is capable of identifying, evaluating, and addressing existing and potential fall hazards, and who has the employer’s authority to take prompt corrective action with regards to such hazards. (*ANSI Fall Protection Code Definition 2.30*)

Competent Trainer – a person with the appropriate training, education, knowledge and experience, capable of delivering a quantifiable educational program in a safe and effective manner to a Participant(s).

Connector – a device (ex. carabiners, snap hooks, rapid links) used to combine components of a rope access system.

Climber – a term used to describe a rope access worker who may be ascending or descending a rope or structure.

Descender - a manually operated belay device best suited for controlled downward movement along a lifeline.

Energy Absorber / Shock Absorber – a component of a personal fall arrest system designed to dissipate / limit shock related energy to the human body imposed during the fall arrest process.

Fall Factor – the maximum distance a person could fall, divided by the length of the rope attaching to the anchorage point. (*SPRAT “Safe Practices for Rope Access Work” 2.14*)

Fall Protection System – any equipment, device or system that prevents an accidental fall from elevation or that mitigates the effect of such a fall. (*ANSI Fall Protection Code Definition 2.67*)

Fall Arrest System – a fall protection system that is designed to arrest the fall of a worker in a manner that mitigates and/or prevents injuries produced by forces of shock and structural impact.

Fall Restraint System – a fall protection system that is designed to prevent the possibility for a fall by keeping workers from entering an area where the risk of a fall exists.

Rope Access System – a fall protection system that is used as a means of accessing structures or areas that would otherwise be either impossible or impractical to reach with scaffolding or the use of other forms of fall protection.

Work Positioning System – a fall protection system that is designed to secure and stabilize a worker, standing, balancing on or leaning against a slope or structure, in a manner that allows them to complete hands-free work.

First Man Up Fall Protection System – A system of fall protection that can be set-up / put in place by a worker, without any exposure to the risk of a fall.

Incident – an unplanned or unintentional occurrence that produces significant threat to personal injury or property damage. Sometimes referred to as a close call or near miss.

Job Hazard Analysis / JHA – A written statement prepared by the rope access worker and/or employer that outlines job specific health and safety issues required to minimize the threat for injury to self and others.

Kernmantle Rope – Synthetic rope with a load bearing core (kern) and a woven protective cover (mantle).

Dynamic Kernmantle Rope - a rope with greater than 10% elongation potential at 10% of its minimum breaking strength.

Low Stretch Kernmantle Rope – a rope with greater than 6% and less than 10% elongation potential at 10% of its minimum breaking strength.

Static Kernmantle Rope – a rope with less than 6% elongation at 10% of its minimum breaking strength.

Ladder Stabilizer (Roof Access Specific)– any device designed specifically by manufacturer to enhance a ladder’s resistance to the forces of kick-out and/or lateral motion during roof access use.

Lanyard – a component of a rope access system consisting of a flexible rope, flat cordage strap or webbing typically utilized to attach a lifeline or harness to a connector, arrestor, energy absorber or anchor.

Lifeline - a component of a rope access system consisting of rope cordage secured on or over or to a structure by at least one anchor point.

Line Placement – the act of pulling a Main Line or Safety Line rope in place over the ridge cap of a pitched roof structure through the use of a tag-line system.

Line Placement Device – a tool or collection of tools / tag line system, employed from ground level to position a lifeline in place across an object or structure.

Low-Slope Roof – a roof having less than or equal to 4 in 12 (vertical to horizontal). (OSHA 1926.500 (b))

Main Line – the primary rope used for ascending, descending or positioning. (*SPRAT “Safe Practices for Rope Access Work” 2.20*)

Minimum Tensile / Minimum Breaking Strength – An expression of foot pounds that represents the point where individualized equipment components begin to fail based on testing results listed by the manufacturer.

Newton / Kilonewton– a unit of force listed in the SI system (The International System of Units), which is comparable to pounds of force (lbf) in the US System. 1 kilonewton (kN) = 1000 newtons = 224.8 lbf.

Participant – an individual student or trainee taking part in an instructor facilitated pitched roofing rope access training.

Pivot Line - a component of a rope access system consisting of rope cordage attached to a main line or main line and safety line that is secured by two anchor points for the purpose of allowing for rope access secured work to take place away from the primary lifeline.

Primary Belay Device – a belay device that serves as the primary means by which a climber is secured to a lifeline.

Qualified Person – an individual who, by possession of approved professional standing, recognized degree, extent of knowledge, training and experience in the field of fall protection and rescue is capable of designing, analyzing, evaluating and specifying fall protection and rescue systems to the extent required by these standards. (ANSI Fall Protection Code Definition 2.129)

Rappel – the controlled descent down a roofing slope or building structure.

Redundancy – a procedure and/or device designed to serve as a fail-safe back up process to all primary components (as determined by a qualified person) of a rope access system that present the possibility of failure primarily associated with user error.

Rescue – the act of safely moving a stuck, incapacitated and/or incapacitated and injured worker back to the position of autonomous mobility or to a position where definitive medical care can be administered.

Rescuer – a person performing a rescue other than the rescue subject of a rescue. (SPRAT “Safe Practices for Rope Access Work” 2.24)

Pick-Off Rescue – the act of worker retrieval via rope access by a rescuer who will approach, attach to and descend with an incapacitated casualty.

Rescue Service – organization determined by the employer to be capable of safe and effective rescue of rope access workers. (SPRAT “Safe Practices for Rope Access Work” 2.25)

Retrieval Rescue – procedure for rescuing rope access workers without placing a rescuer on-rope. (SPRAT 2.26)

Retrieval System – the equipment used for rescue of rope access workers without placing a rescuer on-rope. (SPRAT “Safe Practices for Rope Access Work” 2.27)

Self-Rescue – the incorporation of equipment and techniques necessary for a rope access worker to regain mobility along a lifeline following an incident.

Risk Management – is the identification, assessment and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor and control the probability and/or impact of unfortunate events. (Wikipedia)

Safety, or Backup Line – rope used as a secondary line of defense against falls should the main line, anchor or belay device fail.

Safe Working Load (SWL) – manufacturer’s designated maximum working load given a certain / particular set of environmental or situational conditions.

Shall – the word “shall” is to be understood as denoting a mandatory requirement.

Shear Reduction - the act of selecting, combining or employing components or naturally occurring elements to reduce the cutting force of cordage by increasing the bend radius over which the cordage is subject to.

Should – The word “should” is to be understood as advisory, or a recommendation.

Tag-Line System – tightly braided light polypropylene line attached to a soft projectile and a friction reducing cone that enables a worker to set a lifeline (s) over a structure from the safety of ground level.

Working Load Limit (WLL) – represents the maximum allowable load (as determined by the manufacturer) that a piece of equipment is designed to suspend, hold, raise, lower etc. Working load limits define the boundaries of force that all load rated rope access equipment should operate within in order to avoid damage or compromise.

Work Zones – physical work site areas that correlate to the proximity of the rope access work that is taking place.

Access Zone – Represents the area where rope access techniques are required.

Hazard Zone – Represent area where general public is at risk for injury from the work being performed (i.e. dropped tools).

Safe Zone – Represent area where the general public is clear of the risk for injury from the work being performed

PITCHED ROOF ROPE ACCESS

TRAINING OPERATIONS

INTRODUCTION TO TRAINING OPERATIONS

ACRABAT recognizes that the demands and risk assumed by workers who must access pitched roofing systems are distinctive enough to require an independently organized set of standards to effectively curtail the threat of personal injury. Training Operations Standards cited within this document are based on relevant industry practices and standards established by: Society for Professional Rope Access Technicians (SPRAT), Industrial Rope Access Trade Association (IRATA International), Occupational Safety & Health Act (OSHA), American National Standards Institute (ANSI), National Fire Protection Association (NFPA), Cordage Institute (CI) as well as other professional organizations. This information intended for use by a training organization that utilizes “Competent Trainers” with knowledge and skills based proficiencies in pitched roof specific rope access.

SECTION A:

TRAINING ORGANIZATION STANDARDS

A1 Program Responsibilities

A1.1 The training organization shall provide services consistent with its mission, goals and objectives.

A1.2 The training organization shall accurately represent its products and services to the general public.

A1.3 The training organization shall respect the health and safety of its clients

A1.3a The training organization shall not operate outside the limits of their competencies or control.

A1.3b The training organization shall establish site and program specific risk management procedures that includes reasonable protocol for emergency response and rescue.

A1.3c The training organization shall maintain a 1 to 6 instructor to participant ratio for all training activities that take place above ground level.

A1.3d The training organization shall complete a thorough inspection of all climbing / training platforms and equipment prior to the start of each new class.

A1.3e The training organization shall employ an appropriate screening process for all program participants prior to actual training to determine participant’s risks for personal injury during training process.

A1.3f The training organization shall keep and maintain accurate records of equipment usage and retire equipment according to manufacturer’s recommendations.

A1.4 The training organization shall appropriately establish and implement written policy, procedure and practice that meets the minimum criteria for all pitched roof specific rope access guidelines within the framework of this document.

A1.5 The training organization shall designate a competent trainer to complete all rope access trainings and a qualified person to manage all training personnel and program operations.

- A1.6** The training organization shall disclose all training incidents in the form of a written detailed narrative that includes all pertinent events leading up to and resulting from the incident.
- A1.7** The training organization shall maintain appropriate amounts of general liability and workers compensation insurance.
- A1.8** The training organization shall complete regular and periodic internal program reviews.
- A1.9** The training organization shall submit to regular and periodic external program review.
 - A1.9a** The training organization shall take appropriate actions based on recommendations of external reviews.

SECTION B:

TRAINING PROCESS STANDARDS

B1 The training process shall incorporate both classroom and experiential instruction on all critical components of the pitched roofing specific rope access process:

- B1.1** The training process shall include instruction on appropriate selection, use, maintenance and retirement of all rope access equipment based on the manufacturer's recommendations.
 - B1.1a** The training process shall not include instruction on the use of any lifeline related equipment components in any manner other than which is specifically recommended by the equipment manufacturer.
 - B1.1b** The training process shall include instruction on minimum tensile strengths and working load limits.
- B1.2** The training process shall include instruction on line placement equipment and techniques that do not require any activity above that of ground level to employ.
 - B1.2a** Line placement devices shall be selected and used in a manner that minimizes the threat for injury to participants.
 - B1.2b** Line placement devices shall be selected and used in a manner that represents a respect for minimizing the threat for property damage.
 - B1.2c** Line placement devices shall be selected and used in a manner so that the average adult can learn to effectively deploy them over the minimum height of a two-story structure.
- B1.3** The training process shall include information on the proper identification and appropriate use of fixed anchors, portable anchors, load sharing anchors and anchor deviation.
 - B1.3a** All individual lifelines shall be secured by an anchor that is of sufficient strength to support that lifeline. All shared lifeline anchors shall be of sufficient strength to support the number of lifelines connected to them.
 - B1.3b** All weight based / portable anchors and human anchors should be set up directly beneath eave line of roofing system. Loads to weight based anchors shall only be applied vertically. Weight based anchors shall not be used to secure a pivot line system.

B1.4 The training process shall include information on the appropriate set-up and use of self-belay and/or attended belay systems.

B1.4a Self-belay training shall incorporate the use of redundant belay devices.

B1.4b Self-belay training shall include curriculum on slope to slope belay transfers.

B1.4c Self-belay training shall incorporate the use of a multi-directional fall arrester to appropriately secure trainees during the process of slope to slope belay transfer.

B1.4d Self-belay training shall include curriculum on the appropriate set-up and use of pivot lines.

B1.4e Attended belay training shall incorporate the use of both a primary lifeline rope and a back-up / safety lifeline that can also be used as a hand line rope.

B1.4f Attended belay training shall incorporate the use of a personal anchor.

B1.4g Both self-belay and attended belay training shall incorporate instruction on and use of a ridge protection device to minimize the threat of damage to lifeline and / or property.

B1.5 The training process shall include information on knots and knot tying. Knots used should be selected based on application with consideration for strength, shear, wear, and loading.

B1.6 The training process shall involve the use of both single story and two story extension ladders.

B1.6a The training process shall include extension ladder training specific to the safety needs of the rope access worker accessing a pitched roofing system.

B1.6b The training process shall include the use of pitched roof access specific ladder stabilizers.

B1.7 The training process shall include instruction on how to minimize the threat for shock related trauma.

B1.7a The training process shall not allow for more than six (6) foot of lifeline slack line between front and rear dwelling structure anchors.

B1.7b The training process shall not allow for more than two (2) foot of lifeline slack line between participant and active anchor.

B1.8 The training process shall include instruction on how to minimize the threat for suspension trauma.

B1.8a The training process shall include the appropriate classroom instruction and experiential activities to provide trainees with the ability to self-rescue.

B1.9 The training process shall include information on the appropriate set-up and use of two line (primary lifeline & secondary / back-up lifeline) on pitched roofing surfaces that exceed participant's ability to maintain balance without the assistance of a lifeline.

B2 The training process shall incorporate additional safety measures to prevent the injury of their trainees.

B2.1 The training process activities shall be appropriately sequenced in order to minimize the inherent risks associated with facilitating rope access trainees.

B2.2 The training process participants shall be evaluated by their instructors for competencies prior to being allowed to progress to any above ground training activities.

B3 The training process shall insure trainee comprehension of program's critical components with both written and demonstrated skills testing.

SECTION C:

EQUIPMENT, ANCHORS & TOOL STANDARDS

C1 Rope Access Equipment Standards

- C1.1** Equipment will not be specified however should be appropriate for the purpose, application and standards consistent with manufacturer's recommendations.
- C1.2** All components assembled to create a roof specific rope access system shall be compatible with one another and used in a manner that is consistent with the manufacturer's recommendations.
- C1.3** All components of a roof specific rope access system shall be inspected for function and wear prior to use.
- C1.4** All components of a roof specific rope access system shall be selected, assembled and utilized in a manner which prevents a climber from a free fall of more than two (2) feet.
- C1.5** All belay devices should be such that they cannot be accidentally removed or unfastened from a lifeline while a person is attached to it.
- C1.6** Energy absorbers should be utilized on all belay devices that are compatible with such based on manufacturer's recommendations.
- C1.7** All lifeline components subject to impact loading that produces forces in excess of the working load limit should be removed from service and not reused until inspected by a qualified person and determined to be suitable for re-employment within a rope access system.
- C1.8** All manufactured components assembled to create a roof specific rope access system shall be tensile strength rated by the manufacturer to a minimum 5000 lbf (22.2kn) or determined sufficient for use by a qualified person.
- C1.9** All harnesses shall consist of either a one piece (full body) or two piece (combination seat and upper torso) full body harness system that meets ANSI Z359.1 standards for use.
- C1.10** Lifeline rope shall be consistent with that of low stretch or static Kernmantle cordage that has a minimum breaking strength of at least 5000 lbf / 22.2 kN and meets one or more of the following standards: UIAA 107, NFPA 1983, EN 1891 (Type A) or CI 1801-07.
- C1.10a** All lifeline rope and cordage shall be composed of synthetic fibers.
- C1.10b** Lifeline accessory cord utilized as a redundant belay component within a roof specific rope access system shall meet UIAA 102, EN 564, or CI 1803-03 standards or meet design factor requirements as determined by a qualified person.
- C1.11** All roof specific rope access system shall incorporate the appropriate use of PPE (personal Protective Equipment) that include but are not limited to:
- C1.11a** Helmets that meet or exceed ANSI standard Z89 shall be appropriately used to protect participants from impacts with ladders, climbing elements and falling objects
- C1.11b** Gloves
- C1.11c** Appropriate footwear

C2 Rope Access Anchors

C2.1 Appropriate fixed anchors and/or weight based anchors shall be utilized on all pitched roof specific rope access inspections.

C2.1a All fixed anchors in a work positioning system shall be capable of withstanding 3000 lbs of force.

C2.1b All weight based anchors shall be positioned at ground level directly under the roof's eave and capable of sustaining minimum loads of 800lbs prior to counterbalance.

C2.1c All individual lifelines shall be secured by an anchor that is of sufficient strength to support that lifeline. All shared lifeline anchors shall be of sufficient strength to support the number of lifelines connected to them.

C2.1d All anchor webbing shall have a minimum tensile breaking strength of 17.5 kN (4000 lbs) and composed of Spectra, Kevlar, Vectran or similar fibers.

C2.1e All anchors shall be assembled in such a fashion that will prevent the possibility for both horizontal and vertical slippage along the axis of the connection point.

C2.1f All load shared anchors shall be assembled in a manner that will limit anchor redirect deviation angle to no more than 90°.

C3 Tools and Work Equipment

C3.1 All roof inspection tools and equipment shall be compatible with rope access work and not present a significant personal safety risk to the rope access worker.

C3.2 All roof inspection tools and equipment shall be properly secured to the Rope Access worker to prevent them from being dropped and causing damage to person or property.

PRACTITIONER CERTIFICATION STANDARDS

The ACRABAT certification process is intended to establish a minimum standard of knowledge and skills that a candidate should possess. Employers of roof specific rope access workers should evaluate their workers skills and knowledge base to verify suitability to a given job and provide additional training when necessary.

Certification is a credential achieved by an individual that indicates to the rest of the industry that the individual has completed specific training and successfully passed a series of knowledge and skills tests that comply with standards established by ACRABAT.

SECTION D:

CERTIFICATION PROCEDURES FOR ROOF SPECIFIC ROPE ACCESS WORKERS

D1 General Certification Criteria

D1.1 Certifying Host: A certifying host is an organization that provides for individual certification. All certifying organizations must be able to provide for minimum levels of equipment, information and site specific standards consistent with Level I & II, Practitioner training requirements.

D1.2 Certification host shall submit request for certification provider status by completing host application form and forwarding it to ACRABAT home office.

D1.3 Certification host is responsible for forwarding all applicants certification request paperwork to ACRABAT.

D1.4 Practitioner Certification Standards were created in order to establish common standards for identifying practitioner knowledge and skills at a minimum level. Additional evaluation may be required by the employer to verify the rope access worker's knowledge and skills comprehension relevant to a specific job site.

D2 Certification Prerequisites

D2.1 Minimum age of 18 years.

D2.2 Completed release of liability form with signature.

D2.3 Completed and signed statement indicating candidate is both mentally and physically capable to perform rope access work.

D2.4 Completed ACRABAT certification application.

D3 Grading System for both Written Testing and Skills Testing

D3.1 A certifying host is responsible for developing, administering and proctoring practical skills and knowledge testing consistent with applicable practitioner level standards.

D3.1a Certifying host must maintain records documenting all class participants that they have tested and the results of those tests.

D3.2 Each written or skills based test is graded on P/F/D – indicating Pass/Fail/Discrepancy.

D3.2a Pass (P) indicates satisfactory performance during the activity.

D3.2b Fail (F) indicates failure to demonstrate satisfactory performance during the activity and failure of evaluation process.

D3.2c Discrepancy (D) indicates poor performance during the activity, three discrepancies constitute failure of evaluation.

D3.3 Fail (F) Examples: The following represents a partial list of errors that would indicate failure of overall evaluation.

D3.3a Unprofessional conduct.

D3.3b Height phobias.

D3.3c Inability to use line placement tools to position a lifeline across a roof structure from the safety of ground level.

D3.3d Inability to correctly assemble a rope access system.

D3.3e Failure to complete ground safety check prior to use of rope access system.

D3.3f Use of ladders or rope access equipment in a manner which is inconsistent with manufacturer's use instructions.

D3.3g Inability to demonstrate appropriate hands free work positioning that incorporates the use of both primary and redundant belay devices.

D3.3h Inability to demonstrate appropriate techniques for avoiding shock related trauma.

D3.3i Inability to effectively complete a self-rescue from an ascender during true vertical suspension.

D3.4 Discrepancy (D) Examples: The following represents a partial list of actions that would indicate an evaluation discrepancy.

D3.4a Unlocked carabiner

D3.4b Unfastened helmet

D3.4c Inability to complete exercise in a reasonable amount of time

D3.4d Improperly dressed knots

D3.4e Trust issues with rope access equipment

D3.4f Inability to properly care for rope access equipment

D3.4g Unacceptable levels of damage to roofing system

D4 Scope of Certification

D4.1 There are two different types of practitioners: Level I / "Authorized person", Level II / "Competent person".

D4.2 To be certified, an individual shall complete an initial training program that addresses appropriate roof specific rope access safety standards for that level.

D4.3 Given the agreement of a certifying host, experienced practitioners may challenge into a level by providing documentation of experience and completed trainings and by passing both the documented skills and knowledge tests for that level.

SECTION E:

Level I Practitioner / “Authorized Person” / Rope Access Worker

E1 Level I Certification Criteria

E1.1 No experience is required prior to entering a Level I training program.

E1.2 A minimum number of content appropriate training hours shall be completed for full Level I certification. Trainings may exceed time minimums in order to cover vendor or equipment manufacturer recommendations.

E1.2a Full Level I Certification: A minimum of sixteen (16) hours of level appropriate curriculum is required.

E1.2b Level I Classroom Activities: A minimum of two (2) hours of classroom activities that include curriculum on:

- Pitched roof specific ladder safety that includes the use of ladder stabilizers
- Working load limits
- Deceleration, fall factors shock loading and shock trauma
- Rope access equipment care, use and retirement
- Self-belay systems
- Pivot line systems
- Back-up / safety lines
- PPE (Personal Protective Equipment)
- Pitched roof specific rope access work plans that include JHA (Job Hazard Analysis)

E1.2c Level I Ground School Activities: A minimum of two (2) hours of ground school training that includes hands-on / experiential:

- Line placement activities that incorporates ridge cap / rope protection tools.
- Anchor selection and set-up
- Assembly of self-belay systems
- Equipment maintenance and management
- Extension ladder set-up

E1.2d Level I Height Rated Activities: A minimum of four (4) hours of training that takes place above a minimum height of six (6) feet that includes hands-on / experiential:

- Use of self-belay systems
- Assembly and use of pivot line system
- Intermediate slope (7/12 – 12/12 pitched roofing surface) access
- Extreme slope (12/12 – 16/12 pitched roofing surface) access
- Extension ladder assisted access of single and double story slopes of equal to or greater than a 9 in 12 pitch

E1.2e Level I Self-Rescue Activities: A minimum of one (1) hour of self-rescue curriculum that includes participant’s demonstrated ability to free themselves from an ascending or fall arresting device from a position of true vertical suspension.

E1.3 Level I practitioners should be able to demonstrate all the knowledge and skills necessary to complete roof inspections within a self-belay environment.

E1.4 All applicants shall successfully complete and pass a practical skills test consistent with ACROBAT Level I certification standards.

E1.4a Skills evaluation shall be completed by an ACROBAT approved proctor.

E1.5 All applicants shall successfully complete and pass a written exam with a minimum score of 70% consistent with ACROBAT Level I standards.

E1.6 The training organization shall provide program participants with appropriate documentation of training curriculum completed with a copy of the class manual and syllabus.

E1.7 All participants who have completed Level I curriculum, passed level I skills and knowledge testing shall be provided a certification document or card by the certifying body.

E1.8 The duration for Level I / "Authorized Person" certification is for three (3) years.

E1.9 Level I Practitioner recertification process shall include an additional twelve (12) hours of ACROBAT approved Level I training and pass a written knowledge and skills test consistent with current ACROBAT Level I testing standards.

E1.10 An experienced practitioner may "challenge in" to a certified Level I / "Authorized Person" status. This process requires that the Level I applicant present documentation of sixteen (16) hours of roof specific rope access system training and demonstrate the ability to meet or exceed minimum association standards for Level I written and skills testing.

E1.11 Full Level I Certification is one of the steps required to obtain Level II "Competent Person" & "Competent Trainer" status however, in and of itself is insufficient to provide rope access training to others.

E2 Duties of the Roof Specific Rope Access Worker (Level I / Authorized Person)

E2.1 The Level I Roof Specific Rope Access Worker shall have the appropriate qualifications and training required to safely access a pitched roofing system via rope access.

E2.2 The Level I Roof Specific Rope Access Worker shall have a working understanding of employer's applicable policy and procedure.

E2.3 The Level I Roof Specific Rope Access Worker shall possess appropriate communication skills.

E2.4 The Level I Roof Specific Rope Access Worker shall be capable of limited rescue procedures that include the ability to self-rescue.

E2.5 The Level I Roof Specific Rope Access Worker should work under the direction and supervision of a Level II Rope Access Supervisor.

E2.6 The Level I Roof Specific Rope Access Worker shall have the ability to adjust, maintain, care for and inspect rope access equipment.

E2.7 The Level I Roof Specific Rope Access Worker shall have the ability to recognize and avoid work site hazards.

E2.8 The Level I Roof Specific Rope Access Worker shall have the ability to recognize work zones.

E2.9 The Level I Roof Specific Rope Access Worker shall utilize appropriate personal protective equipment.

E2.10 The Level I Roof Specific Rope Access Worker shall be aware of their own limitations and abstain from any task that exceeds individual training, skills, qualifications or experience.

SECTION F:

Level II Practitioner /“Competent Person” / Rope Access Site Supervisor

F1 Level II Certification Criteria

F1.1 All participants shall have successfully obtained a Level I technician prior to beginning Level II “Competent Person” training.

F1.2 A minimum number of content appropriate training and field related experience hours shall be completed for full Level II certification. Trainings may exceed time minimums in order to cover vendor or equipment manufacturer recommendations.

F1.2a Full Level II Certification: Twenty (20) hours of Level II curriculum and forty (40) hours total of documented field related experience. Training hours shall cover all areas contained in Operations Standards. Four (4) hours of the twenty (20) hours of Level II training can be completed as self-study provided that the material covered is consistent with Level II curriculum and documented within a personal training portfolio as proof of completion.

F1.2b Level II Training: A minimum of eight (8) hours of classroom and hands-on experiential activities that include curriculum on:

- OSHA §1926.500 standards for the construction industry
- ANSI Z359.1 – Z359.12 Managed Fall Protection Standards
- SPRAT “Safe Practices for Rope Access Work”
- ACROBAT “Rope Access Standards for Pitched Roofing Systems”
- Risk management plans for training programs
- Work plan development and implementation
- Ladder safety training
- Rope access equipment inspection
- Self-belay systems training
- Attended-belay systems training

F1.2c Participant Rescue Training: A minimum of four (4) hours of rescue training curriculum that includes a simulated participant rescue where trainee demonstrates the knowledge and skills necessary to perform the following types of rescues:

- Self-rescue
- Retrieval rescue
- Pick-off rescue

F1.2d Competent Trainer Certification: Requires an additional forty (40) hours of supervised participant training curriculum instruction.

F1.3 All applicants shall successfully complete and pass a practical skills test consistent with ACROBAT Level II testing standards.

F1.3a Skills evaluation shall be completed by an ACROBAT approved proctor.

F1.4 All applicants shall successfully complete and pass a written exam with a minimum score of 80% consistent with ACROBAT Level II standards.

- F1.5** The training organization shall provide program trainees with a copy of the class manual and syllabus.
- F1.6** Certified Level II Practitioner should be trained in and capable of carrying out site specific first aid procedures and/or protocols.
- F1.7** All trainees who have completed Level II curriculum, passed Level II skills testing, written testing or supervised participant training shall be provided a certification document or card by the certifying body.
- F1.8** The duration for Level II “Competent Person” certification is for three (3) years.
- F1.9** Level II Practitioner recertification process shall include either 1) One hundred fifty (150) hours of pitched roof rope access program supervision and the documentation of Twenty (20) hours of roof specific rope access system training or 2) retake Level II training and pass a written knowledge and skills test.
- F1.10** An experienced practitioner may “challenge in” to a Level II certified status. This process requires that the Level II applicant present a portfolio documenting forty (40) hours of practical field experience, thirty-six (36) hours of rope access training and pass both written knowledge and skills testing that meet Level II standards.

F2 Duties of The Roof Specific Rope Access Site Supervisor (Level II / Competent Person)

- F2.1** The Level II Roof Specific Rope Access Site Supervisor shall provide direct implementation and supervision of employers managed fall protection program (i.e. rope access program).
- F2.2** The Level II Roof Specific Rope Access Site Supervisor shall ensure compliance with both federal and state level work-at-height regulations.
- F2.3** The Level II Roof Specific Rope Access Site Supervisor shall specify appropriate rope access system equipment components, set up and use.
- F2.4** The Level II Roof Specific Rope Access Site Supervisor shall specify appropriate personal protection equipment (PPE) to be used.
- F2.5** The Level II Roof Specific Rope Access Site Supervisor shall evaluate individual skills, training and experience.
- F2.6** The Level II Roof Specific Rope Access Site Supervisor shall provide on-site individual and group training as needed.
- F2.7** The Level II Roof Specific Rope Access Site Supervisor shall create, maintain and update site specific work plans that include JHA (Job Hazard Analysis) evaluations detailing hazards that pitched roof rope access workers are likely to be exposed to and specify the means by which hazards will be controlled or eliminated.
- F2.8** The Level II Roof Specific Rope Access Site Supervisor shall hold regular safety meetings and maintain an appropriate level of communication with all rope access workers.
- F2.9** The Level II Roof Specific Rope Access Site Supervisor shall complete yearly equipment inspections and appropriately remove from service all equipment that is no longer safe for use due to excessive wear, visible damage or exposure to shock or forces of that exceed manufacturers listed working load limit.
- F2.10** The Level II Roof Specific Rope Access Site Supervisor shall establish procedures for the prompt rescue of rope access personnel.

Referenced Material

Bureau of Reclamation, (2004) "Guidelines for Rope Access"

Ropeworks, (2004) "Industrial Rope Access Guidelines"

NSL America, (2009) "The North American Working at Height Handbook" (2011)

SPRAT Society for Professional Rope Access Technicians (2012) "Safe Practices for Rope Access Work"

SPRAT, (2012) "Certification Requirements for Rope Access Work"

Cordage Institute CI 1801-07: Low Stretch and Static Kernmantle Life Safety Rope

Cordage Institute CI 1803-03: Kernmantle Accessory Cords for Life Safety Applications

Fall Protection Code, ANSI/ASSE Z359.0 (2012) Definitions and Nomenclature used for Fall Protection

Fall Protection Code, ANSI/ASSE Z359.1 (2012) Safety Requirements for Personal Fall Arrest Systems

Fall Protection Code, ANSI/ASSE Z359.2 (2012) Minimum Requirements for a Comprehensive Managed Fall Protection Program

Fall Protection Code, ANSI/ASSE Z359.3 (2012) Safety Requirements for Positioning and Travel Restraint Systems

Fall Protection Code, ANSI/ASSE Z359.4 (2012) Safety Requirements for Assisted Rescue Systems, Self Rescue Systems, Subsystems and Components

Fall Protection Code, ANSI/ASSE Z359.6 (2012) Specifications and Design Requirements for Active Fall Protection Systems

Fall Protection Code, ANSI/ASSE Z359.8 (2012) Safety Requirements for Fall Protection in Rope Access Systems

Fall Protection Code, ANSI/ASSE Z359.12 (2012) Connecting Components for Personal Fall Arrest Systems

NFPA 1983 (2006) Standard on Life Safety Equipment for Emergency Services

IRATA International 2009 General Requirements for Certification of Personnel Engaged in Industrial Rope Access Methods

OSHA Fall Protection Standard (Subpart M) 29 CFR 1926.500 Scope, Application and Definitions

OSHA Fall Protection Standard (Subpart M) 29 CFR 1926.501 Duty to Have Fall Protection

OSHA Fall Protection Standard (Subpart M) 29 CFR 1926.502 Fall Protection Criteria and Practices

OSHA Fall Protection Standard (Subpart M) 29 CFR 1926.503 Training Requirements