

The **A**ssociation for **C**ertified **R**ope **A**ccessed **B**uilding **A**ssessment **T**echnicians

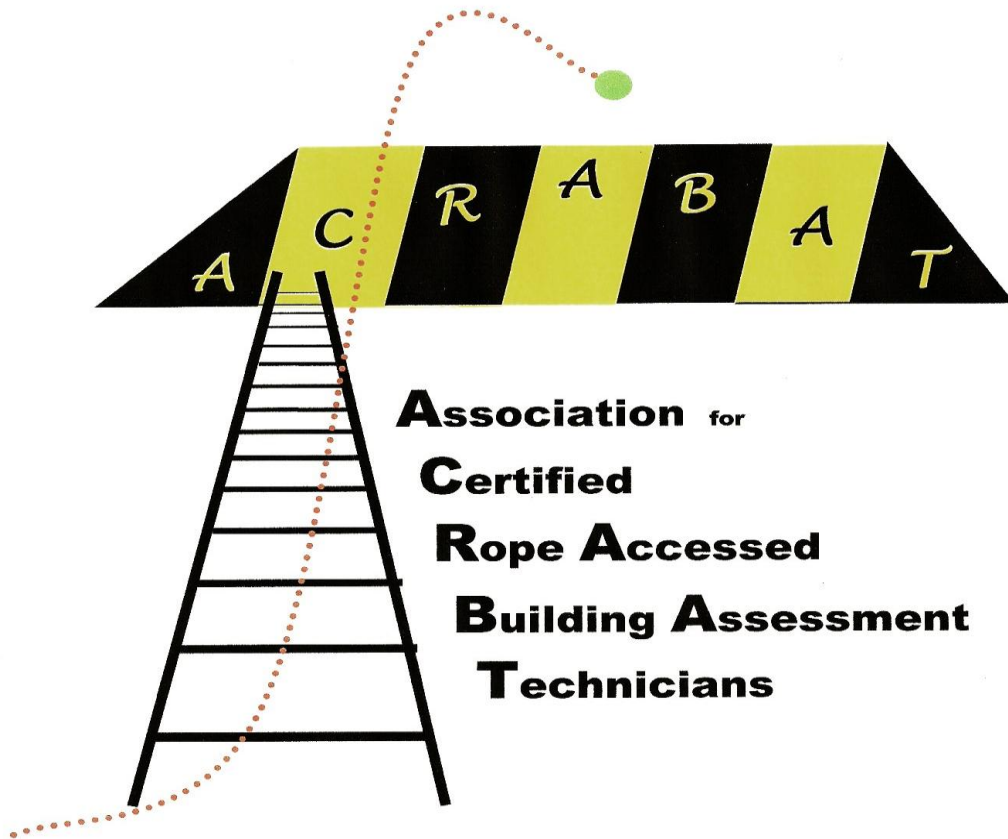
A Professional Association Serving the Building Inspection Trades Industries

PERSONAL FALL ARREST SYSTEM

ASSISTED ROOF INSPECTION

STANDARDS

First Edition



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ACRABAT Mission Statement

The Association of Certified Rope Accessed Building Assessment Technicians (ACRABAT) is a professional organization dedicated to reducing the threat of personal injury for all building inspection trades workers by promoting uniformity standards for practitioner skills and knowledge at a minimum level. ACRABAT seeks to establish professional consensus on Personal Fall Arrest System assisted roof inspections for front line workers, the instructors that train them and the operations administrators that create and maintain such programs.

ACRABAT Vision Statement

Association of Certified Rope Accessed Building Assessment Technicians (ACRABAT) is recognized as the leading professional resource for the facilitation of safe building inspection practice, programs and learnings based on the sound educated consensus among all leaders of the building inspection trades community.

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 Building Inspection (Non-Construction related) Trades Industries who have specific experience and training in the process of *LIFELINE* assisted roof inspection. 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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About ACRABAT

The Association for Certified Ropes Accessed Building Assessment Technicians (ACRABAT) evolved in 2008 out of the deliberate actions of a handful of accredited individuals within the Work at Height Community who were interested in establishing a risk management resource guide for roof inspection (non-construction / restoration) trades professionals.

ACRABAT represents an informational guide for Claims Adjusters, Engineers, Building Inspectors, (as well as numerous other professions with similar risks) to identify proven standards for responsible lifeline assisted roof inspection training and process. Providing such information will allow legitimate training entities to emerge and grow while at the same time prevent rubber stamp rope and harness programs from dominating an issue that literally holds the lives of many thousands in balance.

Make no mistake, ACRABAT is a new professional group currently made up of a little over one hundred members and serving the interest of just a handful companies. ACRABAT is however growing and actively seeking the support of additional representatives within the Building Assessments trade, Work at Height and Lifeline equipment manufacturing community to help chair a full board of directors and investigative committees. Our Board's direction, hand in hand with the research data our committees deliver will lead our industry into place alongside the dozens of other work at height industries who have employed similar risk management strategy to effect drastic reductions in gravitational related incidents, injuries and fatalities.

ACRABAT standards represent a working document that will receive continuous review and revision to incorporate information on emerging products and process in order to maintain the highest level of effectiveness and integrity for those it serves.

ACRABAT Definitions

Anchor – a critical component of a Personal Fall Arrest *BELAY SYSTEM* used as a secure point to attach a *LIFELINE* or *LANYARD*.

ANSI - (American National Standards Institute) American Based Committee for Standardization. Professional US organization that establishes standards for a wide ranging variety of products.

Approved – accepted as appropriately sound by duly appointed administrative or regulatory authority.

Ascender – a *BELAY DEVICE* (ex. Prusik knot, *JUMAR* or *ROPE GRAB*) best suited for climbing up a roof slope by gripping a rope when loaded in one direction and sliding freely in the opposite direction when pushed forward. Many ascenders are not suitable for use as a *PRIMARY BELAY DEVICE* due to insufficient working load ratings, tendency to slip down under force on a wet or icy rope, and/or their threat for potential damage to the rope that they attach to.

Belay – Secure to a *LIFELINE*.

Belay Device – a *CRITICAL COMPONENT* (equipment or hardware) of a *BELAY SYSTEM*. A piece of equipment (ex. *ASCENDER, DESCENDER, Prusik Cord, FALL ARRESTOR*) designed to arrest a fall when used in a manner consistent with the manufacturer's recommendations.

Belay System – A component of a *PERSONAL FALL ARREST SYSTEM* consisting of equipment, environment and corresponding technique used to provide fall protection to a moving climber.

Belay Transfer – action performed by a *CLIMBER* to re-orient a *BELAY DEVICE* or otherwise secure themselves during the process of transitioning to a separate roofing slope.

Body Harness – A single or multiple piece Nylon based component system of straps that encapsulate both the upper and lower torso and provide a point of attachment for *CONNECTORS* or *BELAY DEVICES*, designed to evenly distribute arresting forces across the chest, shoulders, waist and thighs.

Carabiner – A form of *CONNECTOR* consisting of a complete loop with a spring loaded entry gate.

CE – A mark or logo placed on a piece of equipment by the manufacturer to indicate compliance with the laws and standards for safety, environment and consumer protection established by the European Union (EU).

CEN – European Committee for Standardization. Professional European organization that establishes standards for a wide ranging variety of products.

Climber - a single person working within either a *STATIC* or *DYNAMIC BELAY SYSTEM*, responsible for the task of access ascent, descent and assessment of a roofing structure.

Competent Person – a person capable of implementing a *RISK MANAGEMENT* plan for roof inspection. Such a plan would incorporate an understanding of physical limitations, ability to read and assess situational threats for personal injury, and the demonstrated ability to make appropriate decisions when confronted with any roof system that presents unacceptable levels of personal risk to access with or without a *PFAS*.

Connector – a device (ex. carabiners, snap hooks, rapid links) used to combine components of a *BELAY SYSTEM*.

Critical Component – an *ANCHOR, BODY HARNESS, BELAY DEVICE* or other piece of equipment essential to the creation of a *PERSONAL FALL ARREST SYSTEM*.

Descender - a *BELAY DEVICE* used to secure a moving climber along / both up and down a *LIFELINE* (ex. Figure Eight or Grigri) best suited for *RAPPELLING* / climbing down a slope as it allows for the controlled descent of a *CLIMBER* with little more than hand pressure and proper technique.

Dynamic Belay / Team Belay – a *BELAY SYSTEM* made up of at least two people (consisting of a *CLIMBER*, a *GROUND BELAY* person and may include additional people for use as a *PERSONAL ANCHOR* System) all working together as *CRITICAL COMPONENTS* of a *PERSONAL FALL ARREST SYSTEM*.

Dynamic Rope – Rope which is capable of arresting the free fall of a person engaged in mountaineering or climbing with a limited impact force. (EN 892:97)

Element – a structure designed to simulate roofing surfaces of varying heights and pitch.

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

Engineered System – equipment and/or hardware designed and created by a *QUALIFIED PERSON* for the purpose of use within a *BELAY SYSTEM*.

Fall Arrestor – a *BELAY DEVICE* that moves along a *LIFELINE* and engage / lock onto a *LIFELINE* in the event of a fall. Fall arrestors (unlike *ASCENDERS* or *DESCENDERS*) are designed to minimize the threat for defeat by the human hand.

Fall Factor – A measure of fall severity calculated by dividing the distance fallen by the length of rope used to arrest the fall. (NFPA 1983:2001)

Fixed Anchor – a secure point or combination of *LOAD SHARING* points fixed to the earth or structures capable of sustaining a minimum of 5000 lbf of force without failure.

Ground Belay - a *CRITICAL COMPONENT* of a *DYNAMIC BELAY* performed by a single person controlling a *LIFELINE* connected to a *BELAY DEVICE* , who is attached to a *PERSONAL ANCHOR*, or held in place by a person or persons serving as a *HUMAN ANCHOR*, all working together as integral parts of a *PERSONAL FALL ARREST SYSTEM* to secure a *CLIMBER*.

Ground School – a stage of *PFAS* training that marks the transition point between classroom activities and above ground *PFAS* assisted climbing activities. Ground School is utilized as a *RISK MANAGEMENT* strategy performed at ground level or on inclined structures less than fifteen (15) foot in height with no greater than an eight twelve (8/12) pitch that begins at an eave point situated no more than two (2) feet above ground level.

Hand Line / Secondary Lifeline – a *LIFELINE* used by a climber to assist in the process of ascending and descending a pitched roof slope in a *DYNAMIC BELAY* process.

Human Anchor – A form of a *WEIGHT BASED ANCHOR* used to secure either a *STATIC BELAY SYSTEM* or a *DYNAMIC BELAY SYSTEM CLIMBER* when both *FIXED ANCHORS* and *PORTABLE ANCHORS* are not available or appropriate for use.

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.

Instructor – a *COMPETENT PERSON* who has met all *ACRABAT* Level II practitioner standard requirements for training, experience and supervised instruction.

Jumar – a hand held ascending device used to assist in the process of climbing up a steep slope and are also known for their application as a component of self rescue. Jumars, also referred to as hand held ascenders are not rated by most manufacturers for use as a *PRIMARY BELAY DEVICE* and have very limited application for the act of descending.

Lanyard – a *BELAY SYSTEM* component consisting of a flexible rope, wire rope flat cordage strap or webbing typically utilized to attach a *LIFELINE* or belay harness to a *CONNECTOR*, arrestor, *ENERGY ABSORBER* or *ANCHOR*.

Level I Technician – a *REASONABLE PERSON* who has completed the necessary training and passed practical skills and knowledge testing consistent with ACRABAT standards for a Level I Practitioner.

Lifeline - a component of a *BELAY SYSTEM* consisting of rope cordage secured on or over a structure by at least one *ANCHOR* point.

Line Placement – the act of positioning a *LIFELINE* in place across an object or structure.

Line Placement Device – a tool or collection of tools employed from ground level to position a *LIFELINE* in place across an object or structure.

Load Sharing – typically denotes the incorporation of several *ANCHORS* to provide enough foot pounds (LBF) of resisting force to secure a *LIFELINE* within a *PERSONAL FALL ARREST SYSTEM*.

Low Stretch Rope – a rope with a maximum elongation greater than 6% and less than 10% at 10% of its *MINIMUM BREAKING STRENGTH*. (ref. CI 1801-98)

Minimum Tensile / Minimum Breaking Strength – The minimum amount of pound force (typically eighty percent (80%) of *TENSILE STRENGTH*) required for a belay component to demonstrate clear and visible signs that the process of actual physical failure has begun.

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.

NFPA – The National Fire Protection Association / NFPA is an authoritative source that serves as a leading advocate on public safety. Establishes consensus codes and standards recognized by ANSI.

Participant – an individual student or trainee taking part in an *INSTRUCTOR* facilitated *PERSONAL FALL ARREST SYSTEM* classroom training or exercise.

Personal Anchor – a point of attachment used to secure a person performing the responsibilities of *GROUND BELAY*.

Personal Fall Arrest System (PFAS) – the assembly of *BELAY SYSTEM* components (*ANCHOR*, *BODY HARNESS*, *CONNECTOR* and deceleration device) for the purpose of arresting a person in free fall.

Pivot Line / Secondary Lifeline - a component of a *STATIC BELAY SYSTEM* consisting of rope cordage attached to a *LIFELINE* / *PRIMARY LIFELINE* that is secured by two anchor points for the purpose of allowing perpendicular movement 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*. Primary Belay devices are typically selected based on their overall strength rating as well as their resistance for causing damage to a *LIFELINE* during the process of arresting a *CLIMBER* in free fall.

Primary Lifeline – a *LIFELINE* which is attached to at least one *ANCHOR* point located below the eave of a roofing system.

Qualified Person – an individual who, by possession of approved professional standing, recognized degree, extent of knowledge, training and experience has successfully demonstrated the mastery of project coordination, design and problem resolution relating to a specific subject matter.

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

Reasonable Person – a legal term used to describe a rational, reasonably intelligent person, appropriately informed, fair, and conscious of law. This term intended to embody the make up of the “average” person.

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 *BELAY SYSTEM* with a history of failure primarily associated with user error.

Redundant Belay Device – a multi-directional *BELAY DEVICE* that requires no action to re-orient during slope to slope transfers, utilized as a back up to a *PRIMARY BELAY DEVICE*.

Ridge Protection Device – pad or flexible conduit barrier positioned at the ridge of a roofing system that a *LIFELINE* runs either over or through to minimize the threat of abrasion damage to *LIFELINE* or roofing surface.

Rip Stitch Shock Absorbers – a form of energy absorbers that utilize forty-two inches (42”) of stacked / S folded webbing stitched together in a manner that will allow the webbing to rip and unfold in the event of a free fall that produces forces of shock that exceed a designated force (typically nine hundred pounds (900 lb)) situated below the threshold for shock trauma damage to the human body.

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*)

Secondary Lifeline – a *HAND LINE* or *LIFELINE* used in addition to the *PRIMARY LIFELINE* to build *PIVOT LINES* or simply assist / enhance a *CLIMBER'S* mobility on a roof structure.

Self Rescue – the incorporation of equipment and techniques necessary for a *CLIMBER* to regain mobility along a *LIFELINE* following an *INCIDENT*.

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 *BELAY* cordage by increasing the bend radius over which the *BELAY* cordage is subject to.

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

Static Belay / Solo Belay – a Belay System built and utilized by a single person / *CLIMBER*.

Static Rope – a rope with a maximum elongation of 6% at 10% of its *MINIMUM BREAKING STRENGTH*. (ref. CI 1801-98)

Tensile Strength / Breaking Strength – sometimes referred to as tensile breaking strength represents the amount of load force required to bring material or a system of connected materials to failure.

UIAA – International Mountaineering and Climbing Federation (formerly known as the Union of International Alpine Associations). UIAA standards are commonly adopted as EN (European Norm) or CEN standards.

Weight Based / Portable Anchor - a secure point of attachment (as determined by a *QUALIFIED PERSON*) consisting of weight encapsulated / contained / securely attached to by a load rated system of *CONNECTORS* and/or nylon cordage, capable of sustaining at least two times the expected weight of the *CLIMBER*.

Working Load Limit (WLL) – represents the maximum allowable load of a component, system or *BELAY DEVICE* as determined by the manufacturer. Working load limits define the boundaries of force that all load rated *PFAS* equipment should operate within in order to avoid damage or compromise. The determination of WLL is normally the expression of 15% of *MINIMUM BREAKING STRENGTH* however, should also incorporate consideration of outside forces of the operating environment.

Personal Fall Arrest System Assisted Roof Inspection TRAINING OPERATIONS STANDARDS

INTRODUCTION TO TRAINING OPERATIONS STANDARDS

ACRABAT recognizes that the demands and risk assumed by building assessment trades workers, though similar to other work at height trades professionals 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 but not limited to: Occupational Safety & Health Act (OSHA), American National Standards Institute (ANSI), National Fire Protection Association (NFPA), Cordage Institute (CI) as well as other professional organizations.

The intent of these standards is to

- Define critical knowledge, skills and components necessary for training building assessment field technicians to recognize and effectively mitigate personal risk;
- Establish a measurable record of technical structure and competencies required to improve and refine the risk managed building assessment field practice and training process;
- Provide 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.
- Promote creativity for program design and informational delivery within the outline of consistently sound technical practice.

SECTION A: TRAINING OPERATIONS MANAGEMENT

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 its employees as well as to the general public.

A1.3 The training organization *SHALL* respect the confidentiality, dignity rights and general well being of field technician trainees.

A1.4 The training organization *SHALL* not operate outside the limits of their competencies or control.

A1.5 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.

A1.6 The training organization *SHALL* appropriately establish and implement written policy, procedure and practice that meets the minimum criteria for risk managed building assessment guidelines within the framework of this document.

A1.7 The training organization *SHALL* establish site and program specific *RISK MANAGEMENT* procedures that includes reasonable protocol for emergency response.

A1.8 The training organization *SHALL* designate a *QUALIFIED PERSON* to manage all training personnel and program operations.

A1.9 The training organization *SHALL* maintain appropriate amounts of general liability and workers compensation insurance.

A1.10 The training organization *SHALL* complete regular and periodic internal program reviews.

A1.11 The training organization *SHALL* submit to regular and periodic external program review.

Standard specific
explanation material and
reference data available to
all qualified members.

Additional information on
obtaining an ACBAT
membership is available by
visiting our website at:

www.acrobat.org

A1.12 The training organization *SHALL* take appropriate actions based on recommendations of external reviews.

A1.13 The training organization *SHALL* employ an appropriate screening process for all program participants prior to actual training to determine *PARTICIPANTS* risks for personal injury during training process.

A1.14 The training organization *SHALL* maintain a 1 to 5 *INSTRUCTOR* to *PARTICIPANT* ratio for all training activities that take place above ground level.

A1.15 The training organization *SHALL* complete a thorough inspection of all climbing / training platforms and equipment prior to beginning a new class.

A1.16 The training organization *SHALL* keep and maintain accurate records of equipment usage and retire equipment according to manufacturers recommendations.

B1 PFAS ASSISTED ROOF INSPECTION TRAINING CURRICULUM

B1.1 All training organizations *SHALL* recognize the inherent risks associated with facilitating *PFAS* trainees by the appropriate ordering of their trainings that will include classroom instruction, fully equipped ground level rehearsal, and above ground pitched slope climbs.

B1.1a All individual *PARTICIPANTS SHALL* be evaluated by their *INSTRUCTORS* for competencies prior to being allowed to progress to any above ground training activities.

B1.2 All training programs *SHALL* include instruction on appropriate selection, use, maintenance and retirement of all *PFAS* equipment based on the manufacturers recommendations.

B1.2a No *PFAS* training program *SHALL* use or provide instruction on the use of any *LIFELINE* related equipment *COMPONENTS* in any manner other than which is specifically recommended by the equipment manufacturer.

B1.3 All *PFAS* training programs *SHALL* include instruction on how to minimize the threat for shock related trauma.

B1.3a *PFAS* training programs *SHALL* include instruction on how to calculate *FALL FACTORS*.

B1.3b *PFAS* training programs *SHALL* include instruction on how to incorporate *RIP STITCH SHOCK/ ENERGY ABSORBERS*.

B1.4 All *PFAS* training programs *SHALL* include instruction on how to calculate *WORKING LOAD LIMITS*.

B1.5 All *PFAS* training programs *SHALL* include instruction on *LINE PLACEMENT* equipment and techniques that do not require any activity above that of ground level to employ.

B1.5a *LINE PLACEMENT* devices *SHALL* be designed in a manner that represents a respect for minimizing the threat for property damage.

B1.5b *LINE PLACEMENT* devices *SHALL* be designed in a manner so that the average adult can learn to effectively employ them to a minimum height of a two and a half story structure for residential use training and six stories for commercial use training.

B1.6 All *PFAS* training programs *SHALL* employ the use of ladders appropriately rated for the loads that are intended to be placed on them.

B1.6a Single story ladders of no less than eight feet and multi-story ladders of no less than sixteen feet *SHALL* be incorporated as part of the *PFAS* training process.

B1.6b All *PFAS* training programs *SHALL* include specific extension ladder set up and use and retirement instructions based on manufacturers recommendations.

B1.7 All *PFAS* training programs *SHALL* include information on knots and knot tying. Knots used should be selected based on reducing *SHEAR*, building *REDUNDANCY*, minimizing rope wear and rope loading.

B1.8 All *PFAS* training programs shall include information on the proper identification and appropriate use of *FIXED ANCHORS*, *PORTABLE ANCHORS* and *HUMAN ANCHORS*.

B1.8a All individual *LIFELINES* *SHALL* be secured by an anchor that is independent of other *LIFELINES* or *HAND LINES*.

B1.8b All weight based / *PORTABLE ANCHORS* and *HUMAN ANCHORS* *SHOULD* be set up directly beneath eave line of roofing system.

B1.9 All *PFAS* training programs *SHALL* include information on the appropriate set-up and use of both the *STATIC* and *DYNAMIC BELAY* building inspection systems.

B1.9a *STATIC BELAY* training *SHALL* incorporate the use of redundant friction producing *BELAY DEVICES*.

B1.9b *STATIC BELAY* training *SHALL* include curriculum on slope to slope *BELAY TRANSFERS*.

B1.9c *STATIC BELAY* training *SHALL* include curriculum on the appropriate set-up and use of *PIVOT LINES*.

B1.9d *DYNAMIC BELAY* training *SHALL* incorporate the use of both a primary *LIFELINE* rope and a *SECONDARY LIFELINE / HAND LINE* rope.

B1.9e *DYNAMIC BELAY* training *SHALL* incorporate the use of a *PERSONAL ANCHOR* .

B1.9f Both *STATIC* and *DYNAMIC BELAY* training *SHALL* incorporate instruction on and use of a *RIDGE PROTECTION DEVICE* to minimize the threat of *LIFELINE* damage and property damage.

B1.10 All *PFAS* training programs *SHALL* provide for above ground level belayed ascending and descending activities that allow for *PARTICIPANT* understanding of personal strengths and limitations.

B1.10a Above ground level belayed activities *SHALL* be completed on both steep (7/12 – 11/12) and extra steep (12/12+) pitched surfaces.

B1.10b All *PFAS* training programs *SHALL* provide appropriate curriculum on the appropriate selection, set-up and use of life line *ASCENDERS*, *DESCENDERS* and *FALL ARRESTORS*.

C1 EQUIPMENT STANDARDS

C1.1 All manufactured components assembled to create a *PERSONAL FALL ARREST 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*.

C1.2 All components assembled to create a *PERSONAL FALL ARREST SYSTEM* SHALL be compatible with one another and used in a manner that is consistent with the manufacturers recommendations.

C1.3 All components of a *PERSONAL FALL ARREST SYSTEM* SHALL be inspected prior to use.

C1.4 All components of a *PERSONAL FALL ARREST SYSTEM* SHALL be selected, assembled and utilized in a manner which prevents a *CLIMBER* from a free fall of more than six (6) feet or from contacting a lower level.

C1.5 All components of a *PERSONAL FALL ARREST SYSTEM* SHALL be selected, assembled and utilized in a manner which limits the deceleration distance of a *CLIMBER* to no more than three and a half feet (3.5' / 42").

C1.6 All *PFAS* training programs SHALL incorporate equipment and procedures that limit the maximum arresting force on the *CLIMBER* to 900 lbf when secured at waist level of a full *BODY HARNESS*.

C1.7 *RIP STITCH SHOCK / ENERGY ABSORBERS* SHOULD be utilized on all *BELAY DEVICES* that are compatible with such based on manufacturers recommendations.

C1.8 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 *PERSONAL FALL ARREST SYSTEM*.

C1.9 All anchors used within a *PERSONAL FALL ARREST SYSTEM* or systems SHALL be independent from other *ANCHORS*.

C1.10 All metal to metal contact within a *PERSONAL FALL ARREST SYSTEM* SHALL consist of components matched based on the types and hardness of the metals that they are composed of.

C1.11 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 *UIAA*, *NFPA*, *ANSI*, *ASTM*, or *EN* standards and have a *TENSILE STRENGTH* of at least 5000 lbf / 22.2 kN.

C1.11a All harnesses utilized to facilitate *STATIC BELAY* building inspections *SHALL* incorporate either a stitched belay loop or other suitable attachment point (as recommended by manufacturer) centered at waist level in front of the *CLIMBER*.

C1.11b All harnesses used by the *GROUND BELAY* person to facilitate a *DYNAMIC BELAY* building inspections *SHALL* incorporate either a stitched belay loop or other suitable attachment point (as recommended by manufacturer) centered at waist level in the front and the rear of the *GROUND BELAY* persons harness.

C1.12 Helmets that meet *UIAA* 106 or CE 12 492 standards *SHALL* be appropriately used to protect *PARTICIPANTS* from impacts with ladders, climbing elements and falling objects.

C1.13 *LIFELINE* rope *SHALL* be consistent with that of *LOW STRETCH* or *STATIC* Kernmantle cordage that has a 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.

C1.13a All *LIFELINE* rope and cordage *SHALL* be composed of synthetic fibers.

C1.13b *LIFELINE* accessory cord utilized as a *REDUNDANT* belay component within a *PERSONAL FALL ARREST SYSTEM* *SHALL* meet *UIAA* 102, *EN* 564, or *CI* 1803-03 standards or meet design factor requirements as determined by a *QUALIFIED PERSON*.

Referenced Equipment Standards

ASTM F 1772-99 (2005): Standard Specification for Climbing Harness

ASTM F 1773-97 (2004): Standard Terminology Related to Climbing and Mountaineering Equipment and Practices

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 (2007) Definitions and Nomenclature used for Fall Protection

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

Society for Professional Ropes Access Technicians (SPRAT) 2007: Safe Practices for Rope Access Work

UIAA (2004) Mountaineering and Climbing Equipment 102: Accessory Cord

UIAA (2004) Mountaineering and Climbing Equipment 105: Harnesses

UIAA (2004) Mountaineering and Climbing Equipment 106: Helmets

UIAA (2004) Mountaineering and Climbing Equipment 107: Low Stretch Ropes

PRACTITIONER CERTIFICATION STANDARDS

Practitioner Certification Standards were created in order to establish common standards for identifying practitioner knowledge and skills at a minimum level. The goal of ACRABAT standards of practice is to encourage the continuous improvement of roof access safety and training standards by promoting uniformity within the roof inspection trades industry.

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.

All ACRABAT Practitioner Certification Standards are written on a working document that will receive updated revisions to reflect new trends and best practices for the industry as needed.

SECTION A:

CERTIFICATION STANDARD RELATED TO LEVEL I, II & III PRACTITIONERS

A1 CERTIFICATION PROCESS

A1.1 Scope of Certification

There are three different types of practitioners: Level I / Technician, Level II / Instructor and Level III / Program Administrator .

To be certified, an individual *SHALL* complete an initial training program that addresses appropriate *PERSONAL FALL ARREST SYSTEM* assisted roof inspection safety standards.

Given the agreement of a certifying body, 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.

A1.2 Certifying Body

A certifying body 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, & III Practitioner training requirements.

A1.3 Testing

A certifying body is responsible for developing and administering practical skills and knowledge testing consistent with applicable practitioner level standards.

Certifying bodies must maintain records documenting all class participants that they have tested and the results of those tests.

B1 Level I Practitioner / Technician

B1.1 No experience is required prior to entering a Level I training program.

B1.2 Minimum age for certification as a *LEVEL I TECHNICIAN* is 18.

B1.3 A minimum number of content appropriate training and field related experience hours *SHALL* be completed for full Level I certification. Trainings may exceed time minimums in order to cover vendor or equipment manufacturer recommendations.

B1.3a Full Level I Certification: A minimum of sixteen (16) hours of level appropriate curriculum is required.

B1.3b Level I Classroom Activities: A minimum of four (4) hours of classroom activities that include curriculum on:

- ladder safety
- *WORKING LOAD LIMITS*
- deceleration, *FALL FACTORS* shock loading and shock trauma
- *PFAS* equipment care, use and retirement.
- *STATIC BELAY SYSTEMS*
- *DYNAMIC BELAY SYSTEMS*

B1.3c Level I Ground School Activities: A minimum of four (4) hours of *GROUND SCHOOL* training that includes hands-on / experiential :

- *LINE PLACEMENT* activities.
- *ANCHOR* selection, set up and use.
- creation and use of *STATIC BELAY SYSTEMS*
- creation and use of *DYNAMIC BELAY SYSTEMS*

B1.3d Level I Height Rated Activities: A minimum of six (6) hours of training that takes place above a minimum height of six (6) feet that includes hands-on / experiential:

- *LINE PLACEMENT* activities.
- *ANCHOR* selection, set up and use.
- creation and use of *STATIC BELAY SYSTEMS*
- creation and use of *DYNAMIC BELAY SYSTEMS*
- creation and use of *PIVOT LINES*
- 7/12 – 12/12 pitched roofing surface access

- 12/12 – 16/12 pitched roofing surface access
- extension ladder assisted access of single story (6ft – 12ft) pitched slopes
- extension ladder assisted access of double story (18 ft or greater) pitched slopes

B1.3e Level I Self Rescue Activities: A minimum of two (2) hours of *SELF RESCUE* curriculum that includes *PARTICIPANT'S* demonstrated ability to free themselves from a position of true vertical suspension.

B1.4 Level I practitioners should be able to demonstrate all the knowledge and skills necessary to complete roof inspections within a *STATIC BELAY* environment.

B1.5 Level I practitioners should be able to demonstrate all the knowledge and skills necessary to complete roof inspections within a *DYNAMIC BELAY* environment.

B1.6 All applicants *SHALL* successfully complete and pass a practical skills test consistent with ACROBAT Level I standards with 100% accuracy in order to receive *LEVEL I TECHNICIAN* certification.

B1.7 All applicants *SHALL* successfully complete and pass a written exam consistent with ACROBAT Level I standards with 80% accuracy in order to receive *LEVEL I TECHNICIAN* certification.

B1.8 The training organization *SHALL* provide program *PARTICIPANTS* with appropriate documentation of training curriculum completed with a copy of the class manual and syllabus. 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.

B1.9 The duration for *LEVEL I TECHNICIAN* certification is for two (2) years.

B1.10 Level I Practitioner recertification process *SHALL* include an additional four (4) hours of ACROBAT approved Level I training and pass a written knowledge and skills test with a score of at least 80%.

B1.11 An experienced practitioner may “challenge in” to a certified *LEVEL I TECHNICIAN* status. This process requires that the Level I applicant present a portfolio

documenting sixteen (16) hours of roof inspection specific *PFAS* training and pass an ACRABAT approved skills test with 100% accuracy and a written knowledge exam with a score of at least 80%.

B1.12 Full Level I Certification is one of the steps required to obtain Level II Instructor status however, in and of itself is insufficient to train others.

C1 Level II Practitioner / Instructor

C1.1 All participants *SHALL* have successfully obtained a *LEVEL I TECHNICIAN* prior to beginning Level II *INSTRUCTOR* training.

C1.2 Minimum age for certification as a Level II Instructor is 21.

C1.3 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.

C1.3a Full Level II Certification: Forty (40) hours of Level II curriculum, one hundred (100) hours total of documented field related experience and forty (40) hours of supervised instruction to level I trainees is required. Training hours *SHALL* cover all areas contained in Operations Standards. Sixteen (16) hours of the forty (40) 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.

C1.3b Level II Training: A minimum of thirty-six (36) hours of classroom and experiential activities that include curriculum on:

- OSHA standards for the construction industry
- roof inspection risk assessment
- *RISK MANAGEMENT* plans for *PFAS* training programs
- ladder safety training

- *WORKING LOAD LIMITS*
- deceleration, *FALL FACTORS*, shock loading and shock trauma
- *PFAS* equipment care, use and retirement.
- Facilitating trust in *LIFELINE* equipment and team belay partners.
- *STATIC BELAY SYSTEMS*
- *DYNAMIC BELAY SYSTEMS*

C1.3c 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*
- High Angle *PARTICIPANT* Rescue
- Rescue of *PARTICIPANT* from vertical suspension

C1.4 The training organization *SHALL* provide program trainees with a copy of the class manual and syllabus. All trainees who have completed Level II curriculum, passed level II skills and knowledge testing and provided appropriate documentation of field and supervised *PARTICIPANT* training *SHALL* be provided a certification document or card by the certifying body.

C1.5 Certified Level II Practitioner *SHALL* be trained in and capable of carrying out site specific first aid procedures and/or protocols.

C1.6 All Certified Level II Practitioners *SHALL* work within the framework of a lifeline access building assessment training program directed by a certified Level III Program Administrator.

C1.7 The duration for Level II Instructor certification is for three (3) years.

C1.8 Level II Practitioner recertification process *SHALL* include either 1) One hundred fifty (150) hours of Level I program training delivery and the documentation of Twenty four (24) hours of Personal Fall Arrest System (PFAS) training along with successful completion of a written knowledge test; or 2) retake Level II training and pass a written knowledge and skills test.

C1.9 An experienced practitioner may “challenge in” to a Level II certified status. This process requires that

the Level II applicant present a portfolio documenting two hundred (200) hours of Level I program training delivery, one hundred (100) hours of practical field experience, eighty (80) hours of training and pass both written knowledge and skills testing that meet Level II standards. Twenty-four (24) hours of the eighty (80) hours of Level II training can be completed as self-study provided that the material covered is consistent with Level I, & II curriculum and documented within a personal training portfolio as proof of completion.

C1.10 Written knowledge test *SHALL* meet Level II training standards and be passed with a score of at least 80%.

C1.11 All applicants *SHALL* successfully complete a practical skills test that complies with Level II standards in order to receive certification.

C1.12 Full Level II Certification is one of the steps required to obtain Level III Administrator status however, in and of itself is insufficient to begin a *PFAS* assisted roof inspection program.

D1 Level III Practitioner / Program Administrator

D1.1 All participants *SHALL* have successfully obtained a Level II Instructor status prior to beginning Level III Administrator training.

D1.2 The minimum age for certification as a Program Administrator is 25.

D1.3 A minimum number of content appropriate training and field related experience hours *SHALL* be completed for full Level III certification. Trainings may exceed time minimums in order to cover vendor or equipment manufacturer recommendations.

D1.3a Full Level III Certification: Thirty (30) hours of *PERSONAL FALL ARREST SYSTEM* (PFAS) program management training and three hundred (300) hours of Level I class instruction to level I trainees is required, sixty (60) of which must be program site

specific. Training hours *SHALL* be consistent with Level III curriculum and documented within a personal training portfolio as proof of completion.

D1.4 The training organization *SHALL* provide program participants with appropriate documentation of training curriculum completed with a copy of the class manual and syllabus. All trainees / *INSTRUCTORS* who have completed Level III curriculum, passed level III skills and knowledge testing and provided appropriate documentation of field and class instruction related experience *SHALL* be provided a certification document or card by the certifying body.

D1.5 Certified Level III Practitioners / Program Administrators *SHALL* be capable of developing an appropriate training site and corresponding curriculum that complies with AC RABAT *PFAS* assisted roof inspection standards

D1.6 Certified Level III Practitioners / Program Administrators *SHALL* be able to supervise all aspects of the training program operations.

D1.7 Certified Level III Practitioners / Program Administrators *SHALL* be capable of developing the following program policies, effectively communicating them to program personnel and ensuring that they are followed.

- Site specific *RISK MANAGEMENT* procedures and/or protocols.
- Site specific first aid procedures and/or protocols.

D1.8 Certified Level III Practitioners / Program Administrators *SHALL* be capable of developing practitioner training programs as well as in-service trainings on site and program specific operating procedures.

D1.9 The duration for Level III Program Administrator certification is for Five (5) years.

D1.10 Level III Practitioner recertification process *SHALL* include a minimum of three hundred (300) hours of direct Rope Accessed Building Assessment training program administrative related activities and thirty (30) hours of training related to *PERSONAL FALL ARREST SYSTEM* program management.

D1.11 An experienced practitioner may “challenge in” to a Level III certified status. This process requires that the Level III applicant present a portfolio documenting three hundred (300) hours of Level I program training delivery, two hundred (200) hours of practical field experience, eighty (80) hours of general *PFAS* training, thirty (30) hours of *PFAS* program management training and pass both written knowledge and skills testing that meet Level III standards. All training material completed must be consistent with Level I, II, & III curriculum and documented within a personal training portfolio as proof of completion.

D1.12 Written knowledge test *SHALL* meet Level III training standards and be passed with a score of at least 80%.