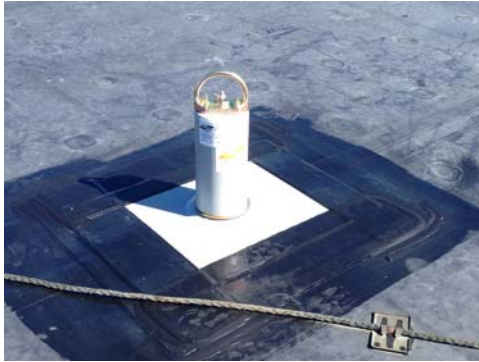




Instructions for *Safe Approach* Tip Over Roof Anchor



Warning!

THE USER OF THIS EQUIPMENT, AND THE USER'S EMPLOYER MUST READ AND COMPLY WITH THESE INSTRUCTIONS. FURTHERMORE, THE USER AND THE USER'S EMPLOYER MUST READ AND COMPLY WITH ALL INSTRUCTIONS, LABELS, WARNINGS AND MARKINGS INCLUDED WITH EACH COMPONENT OF THE FALL ARREST SYSTEM OF WHICH THIS PRODUCT IS A PART. FAILURE TO UNDERSTAND AND COMPLY WITH THESE INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.

IF THESE INSTRUCTIONS ARE UNCLEAR TO YOU, PLEASE CONSULT A COMPETENT PERSON. SHOULD THESE INSTRUCTIONS BECOME LOST OR DAMAGED, OR SHOULD AND LABELS, INSTRUCTIONS OR MARKINGS BECOME ILLEGIBLE; PLEASE CONTACT SAFE APPROACH FOR REPLACEMENTS. SHOULD YOU NEED FURTHER ASSISTANCE WITH UNDERSTANDING THE PROPER EMPLOYMENT OF THIS PRODUCT, PLEASE CONTACT Safe Approach Inc. FOR ASSISTANCE:

Safe Approach Inc.
206 Mechanic Falls Road
Poland, Me 04274, USA
1-800-471-1157
1-207-345-9900
www.safeapproach.com

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Section 1: Warnings and Advisories

This product is to be used as a part of a personal fall arrest system, and should be used only with compatible components. Please see Advisory #3 in this section for further details. Failure to use compatible components can result in a failure of the system to perform as intended, which may result in serious injury or death.

Throughout the OSHA regulations for safety and health, there are references to Competent Persons and Qualified Persons. ANSI Z359.0-2007 goes on to further define the roles and qualifications of these individuals; as well as Authorized Persons and their importance in the workplace. These terms are also used in these instructions. Below is a brief description of the part these individuals play in the employment of fall protection equipment:

Authorized Person - a person who is exposed to fall hazards during the course of their work. This individual requires formal training in the use of personal fall protection equipment and systems.

Competent Person – a trained and experienced person who is designated to supervise, implement and monitor an employer’s managed fall protection program. This individual is capable of identifying and addressing fall hazards and is authorized to make decisions and take corrective action in the workplace.

Qualified Person – a person possessing a degree or professional certificate and having extensive training, knowledge and experience with fall protection and who is capable of designing and specifying fall protection equipment and systems to address fall hazards.

Please read these instructions and be sure that you understand them prior to utilizing this equipment. Also be sure to read the instructions included with other components which are being utilized in your Personal Fall Arrest System (Harnesses, connectors, anchorage connectors, etc.). Failure to understand and comply with manufacturer’s instructions may result in serious injury or death.

IF YOU DO NOT UNDERSTAND ANY PART OF THESE INSTRUCTIONS, PLEASE HAVE THEM EXPLAINED TO YOU BY A COMPETENT PERSON OR EXPERIENCED SUPERVISOR OR FOREMAN.

This product is to be used as part of a complete fall arrest system in accordance with industry-recognized best-practices and your

employer’s fall protection plan, as required by the Occupational Health and Safety Administration. Be aware of your employer’s fall protection plan and rescue plan. Be aware of the specific fall hazards on your jobsite and work deliberately to avoid these hazards in the course of your work. Also be aware of hazards and obstructions in your fall path, and work with your employer to eliminate these hazards where possible. Failure to be aware of and to address these hazards may result in serious injury or death.

Do’s and Don’ts

- **Do** use this device only with compatible components of a comprehensive fall arrest system.
- **Do** use this device only in a system which limits free fall distance to 6 ft or less.
- **Do** use extreme caution when installing this device.
- **Do** rig this device to avoid the hazards of “swing fall” (see Section 2.9)
- **Do** wear gloves when handling wire rope.
- **Do** use this device only when your clearance distance is a minimum of 2 ft AFTER you have calculated the total fall distance (see section 2.8 for details on clear fall distances).
- **Do** make compatible connections (see Advisory #3 at the end of this Section).
- **Do** call Safe Approach Inc. if the device is damaged, does not pass inspection (see Section 6), or has arrested a fall.

- **Don’t** use this device as an anchorage for hoisting materials or equipment.
- **Don’t** use this device if it has been exposed to corrosion, chemicals, excessive heat, flames, or electrical charge or shows signs of any physical damage or deformation.
- **Don’t** allow the connecting device, either lanyard, rope or self retracting lifeline, to wrap around your body. Severe injury or death could result.
- **Don’t** use if you are working near high voltage power lines or other energized electrical equipment. Extreme caution must be taken when working under these conditions.
- **Don’t** use this device if you are pregnant, a minor, or have a reduced tolerance to fall forces by reason of age, physical medical condition, or other pre-existing disorders.
- **Don’t** attempt to disassemble, repair or alter this device in any way.

Advisory #1: Further Reading

If you have access to the internet, please go to www.osha.gov. This website is an exceptional resource, and has a great deal of information which is easy to access. Use the search field to find information on fall arrest, including standards, news, interpretations and other valuable tools. The more you know about how this product works and how it is supposed to be used, the safer you will be during the course of your work.

Advisory #2: Proper product selection

Product selection is an important element of fall protection. Fall Arrest products are like any other tools that you may use in the course of your work – there is a proper tool for every application. You may find that while this product is suitable for some applications, it may not be suitable for others. Please be sure to pay close attention to sections 2, 3, and 4, for greater detail on this point.

Advisory #3: Connector Compatibility

Making compatible connections may mean the difference between life and death. Connectors (snap hooks, rebar hooks and carabiners), must be of the locking type and require two distinct actions to open the gate. Your connectors must be sized and shaped so that the rings or structural members to which they are attached will not pose a risk of forcing the gate open, and must fully captivate the connector so that it cannot become disengaged, slide or shift during use or in the event of a fall.

Certain connections are forbidden and should never be attempted with this product or any other unless there is a specific allowance in the manufacturer's instructions. Forbidden connections include, but are not limited to:

- Two or more connectors to one d-ring are a forbidden connection.
- A connection that rests on or loads the gate is a forbidden connection.
- A connection that does not allow the gate to close and lock is a forbidden connection.
- Two or more connectors attached to one another are a forbidden connection.

- Connecting to any ring or structure that does not fully captivate and completely restrict the movement your connector is a forbidden connection.

Section 2: ABCD's

Every Personal Fall Arrest System consists of four basic elements – Anchorage, Body-wear, Connectors/Connecting Devices and Deceleration Devices. Each of these four elements is discussed in greater detail below. If, after reading through this section, you do not fully understand these items and how they work together to form a compatible fall arrest system, please be sure to have this explained to you by a Competent Person.

It is absolutely critical that you be familiar with the proper wear and/or use of each component of your Personal Fall Arrest System (PFAS). Failure to read, understand and adhere to instructional materials and warnings provided with each of these components could lead to catastrophic failure of your PFAS, possibly resulting in serious injury or death.

2.1: Anchorage

The selection of an anchor point and anchorage connector is critical to the successful function of any Personal Fall Arrest System (PFAS). OSHA 1926.502 (d) (15) states that:

“Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds (22.2 kN) per employee attached, or shall be designed, installed, and used as follows: as part of a complete personal fall arrest system which maintains a safety factor of at least two; and under the supervision of a qualified person.”

Ensure that the structure to which you are attaching your tip over anchor is compatible with anchor and capable of meeting the above requirements and that your tip over anchor is installed in accordance with these instructions. Please see **Section 3** for a full list of approved anchorages and installation types.

2.2: Body-wear

Body wear for any application where this tip over anchor is to be used will be defined as a full body harness specifically manufactured for fall arrest. Any connecting device attached to this tip over anchor should

only be attached to the back d-ring of your full body harness for fall arrest applications. The only allowable exception would be in situations where the free fall is limited to an absolute maximum of two feet – in this case, the attachment-end carabiner may be connected to the front d-ring of a full body harness that is so equipped. Under no circumstances should the connecting device ever be attached to a side or hip d-ring for fall arrest: Such a connection could cause serious injury or death. Be sure to read and follow the manufacturer's instructions included with your full body harness at the time of purchase.

2.3: Connectors/Connecting Devices

Connectors and Connecting Devices are terms that are sometimes used interchangeably. It is important to note the differences between these two terms in order to help distinguish the parts that these components play in the rigging of your PFAS. In both cases, these products/components are required to have a minimum static strength of 5,000 lbs. For additional details on requirements for connectors and connecting devices, see OSHA 1926.502 at www.osha.gov as referenced in section 1, advisory #1.

A **connector** is any metallic, mechanical element such as a carabiner, snap hook or rebar hook that physically links one or more elements of a your PFAS together in a manner such that they will remain engaged to one another unless they are intentionally disengaged.

A **connecting device** is an element that connects your full body harness to the anchorage in an effort to ensure that you remain attached or tethered to the structure upon which you are working. In other words, the connecting device is that element which secures you to your anchorage.

2.4: Deceleration Devices

A **deceleration device** is the element of a Personal Fall Arrest System (PFAS) which is activated during a fall event and reduces the forces exerted on the user's body and on the anchorage during the arrest of the fall.

2.5: Fall Arrest

Fall Arrest is an area of Fall Protection which focuses on stopping a fall once it has occurred. Personal Fall Arrest Systems typically consist of an anchorage, a full body harness and a connecting device with built in deceleration device, designed to bring a falling user to a stop in the shortest possible distance while limiting the force imparted to the user's body.

2.6: Fall Restraint

Fall Restraint is an area of Fall Protection devoted to restraining the user of the system in a manner which restricts his or her access to the fall hazard in a manner such that they cannot be subjected to a fall. A typical Fall Restraint System consists of an anchorage, a full body harness or a restraint belt and a fixed length restraint lanyard. An SRL should never be utilized in a restraint application as it is not capable of restricting a user's access to fall hazards.

2.7: Work Positioning

Work Positioning is an area of Fall Protection devoted to allowing a user to work on a vertical surface by means of a positioning assembly, and restricting the user's exposure to a fall of no more than two feet. Typical positioning assemblies consist of a large rebar hook and a length of chain, rope, wire rope or webbing with a double locking snap hook on either end. These snap hooks are attached to d-rings on the hips or on the waist of the user's full body harness, with the rebar hook attached to the structure upon which the user is working. An SRL should never be used for work positioning, nor should it ever be attached to a side or hip d-ring on a full body harness.

2.8: Free-Fall

Free-Fall is the distance that a worker will fall before the connecting device or deceleration device elements of the PFAS will begin to engage during a fall event. OSHA allows a maximum Free-Fall Distance of 6' (6 feet) when rigging a Personal Fall Arrest System (PFAS). In some cases, exceptions may be allowed when there is no practical way to limit the Free-Fall Distance to 6', such as a job-site where no overhead anchor-point is available. Tying off in a manner that would create a Free-Fall greater than 6' should always be a last resort. If you are rigging a system that allows more than 6' of Free-Fall, make sure your Connecting Device/Deceleration Device is rated for this application. Please contact Safe Approach if you have questions regarding compatibility of components as it relates to the tip over anchor.

2.9: Clear-Fall

Clear-Fall or Clear-Fall Distance is the distance that is required to safely arrest the fall of a user. When working at heights and using a PFAS, it is important to consider the distance between the walking/working level and the next lower level to ensure that the components selected are capable of arresting the user's fall before they

hit the next lower level. The required Clear-Fall Distance can easily be calculated by adding together the Free-Fall Distance, the Deceleration Distance, the height of the user plus a safety factor of 2 feet. The formula for calculating Clear-Fall Distance is shown below:

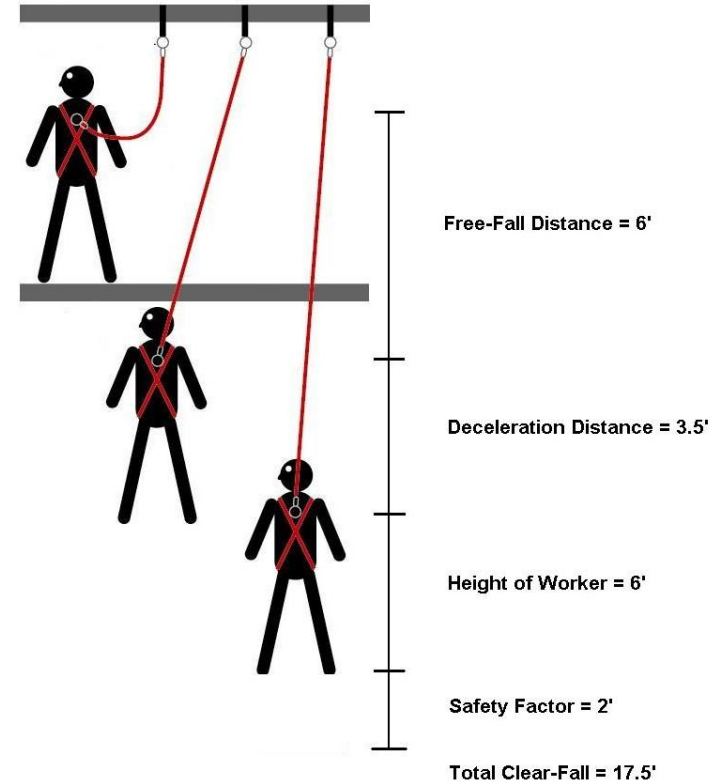
$$\text{Free-Fall Distance} + \text{Deceleration Distance} + \text{Height of Worker} + \text{Safety Factor} = \text{Clear-Fall Distance}$$

The matrix below can be used as a guide for calculating Clear-Fall Distance on your job-site:

	Example Values	Actual Values
Free-Fall Distance (OSHA allows up to 6')	6'	
Deceleration Distance (Typically 3.5' or less)	3.5'	
Height of Worker	6'	
Safety Factor (Minimum of 2')	2'	
Total (Sum of all values)	17.5'	

See figure 2.1 on the next page for a graphic illustration of Clear-Fall Distance and the method for calculating. It is also necessary to consider the fall path when determining the Clear-Fall limitations in your application. Ensure the fall path is clear of obstructions, protrusions, equipment or materials that may be a hazard in the event of a fall. Pay special attention to those items which may present an impalement hazard. Obstructions in the fall path may be just as hazardous as the fall itself, and your PFAS may not be able to protect you from these hazards. Failure to clear the fall path may result in serious injury or death. Rig your PFAS with extreme caution, and be aware of all of the factors that may come into play in the event of a fall.

Figure 2.1: Clear-Fall Diagram



2.10: Swing-Fall

Swing-Fall is the phenomenon that occurs when the user falls from a location that is not directly adjacent to, or directly below the anchorage connector. This is also referred to as the “pendulum effect”, and can result in a situation where the user is not only falling vertically, but is also swinging horizontally as well. This can bring additional hazards into play, as you may swing into an obstruction or structural element, causing serious injuries (see figure 2.2). A significant Swing-Fall may also require increased Clear-Fall distance. As it pertains to the tip over anchor, a good rule of thumb is to work in an area that does not exceed an angle greater than 15 degrees from perpendicular to the edge in any direction. See figure 2.3 on the next page.

Figure 2.2: Swing-Fall Diagram

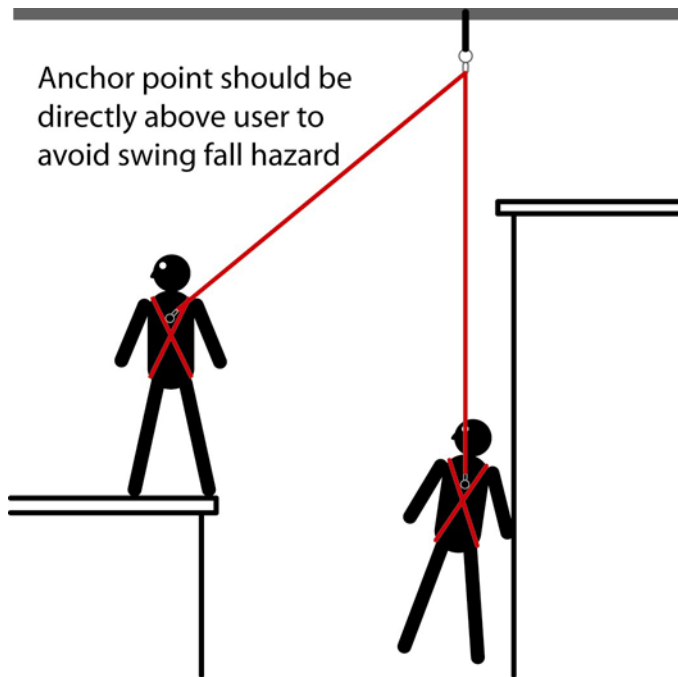
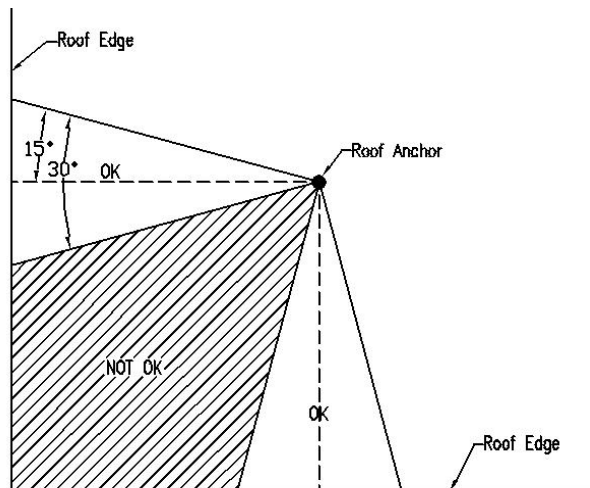


Figure 2.3: Rooftop Swing-Fall Diagram



Be sure to consider Swing-Fall when calculating your Clear-Fall requirements and checking the fall path for hazards and instructions. Failure to do so may result in serious injury or death. Should you have any questions regarding Free-Fall, Clear-Fall, Swing-Fall or other hazards in the fall path, be sure to contact *Safe Approach Inc.* or consult with a competent person or your direct supervisor on your job-site.

Section 3: Use and Limitations

This section deals with the general use and limitations of the tip over anchor. Please read this section and all sections of the manual thoroughly. If your application is not addressed, or if you have questions regarding your specific needs, please contact *Safe Approach Inc.* immediately for additional guidance.

3.1: Application and General Guidelines

When properly installed and utilized, this tip over anchor will provide safety and mobility for a single user, or serve as an anchorage point for a horizontal lifeline system that limits the end forces to 2500lbs or less.



WARNING: Horizontal lifeline system may only be used when the roof anchor is fastened to the roof structure using Fablok fasteners or toggle bolts, or when the roof anchor is attached to concrete deck.

Before using this product, the user should be trained in the use of fall arrest products and should have completed a minimum course of instruction (4-8 hours) for *Authorized Person Training* as outlined in ANSI Z359.2-2007. The user must also read and be familiar with all of the material contained in this instruction manual as well as all labels and warnings affixed to the tip over anchor. If you have any questions regarding the use or operation of this product, please contact *Safe Approach Inc.* or your immediate supervisor before using.

This product must be inspected before each use. For details on proper inspection procedures, please refer to section 8 of this manual. Should this product fail to pass inspection, it must be immediately removed from service and replaced.

The tip over anchor is intended to be used as part of a complete Personal Fall Arrest System and will comprise multiple components (see section 2.1 through 2.4 of this manual for clarification of these terms). This product should be attached to your anchorage using the proper fasteners.

Your anchorage should be rigged in a manner such that Free-Fall is restricted to no more than 6' (6 feet). This product is not designed to be used in applications where Free-Fall may exceed 6'. Be sure to review the Clear-Fall diagram and worksheet in section 2.9 of this manual.

This product meets the requirements of OSHA 1926.502 as well as ANSI Z359.1-2007. For further details on these requirements, please go to www.osha.gov to review the OSHA requirements. Copies of the ANSI standards are available at www.asse.org in the e-standards store.

3.2: Limitations

1. The structure must be capable of supporting the loads imposed on it by this roof anchor. When installed properly, the tip over anchor can be used on a variety of roof types:
 - A. Standing Seam or Ribbed Steel: The tip over anchor is designed to accommodate seam spacing of 8" to 20" in 1" increments. The minimum allowable material thickness is 24 gauge.
 - B. Membrane: The tip over anchor is designed to be used on built up membrane roofs up to a total thickness of 9" (including membrane, insulation and decking thickness). Roof substrate should be type B steel decking with a minimum thickness of 24 gauge.
 - C. Concrete: The tip over anchor is designed to work on concrete roof decks with a minimum thickness of 4".
 - D. Plywood: The tip over anchor is designed for use on plywood roof decks with a minimum thickness of 5/8" CDX grade or better. Plywood is approved for temporary applications only when used with lags or screws. Permanent application is acceptable using toggle bolt kit and minimum 3/4" CDX plywood.Please consult Safe Approach for application help on any other types of roof substrates.
2. **Capacity:** The tip over anchor is designed to accept one personal fall arrest system at a time with a user weighing no more than 310lbs combined weight (including clothing and tools).
3. **Personal Fall Arrest System:** Any personal fall arrest system used with the tip over anchor must meet all applicable OSHA

and ANSI requirements. PFASs must limit that maximum arrest force to 1800lbs or less and must be rigged in such a way to limit the free fall distance to 6' or less. If the maximum free fall distance must be exceeded, the employer must be able to document that the maximum arrest forces exerted on the tip over anchor do not exceed the limitations given in this section.

4. **SRL's and a Clear Fall Path:** Situations which do not allow for an unobstructed fall path should be avoided. Working in very confined or cramped spaces may not allow the body to reach sufficient speed to cause the SRL to lock should a fall occur. Working on slowly shifting material such as a loose shingles or work on a low slope roof may also not allow enough speed to build up to lock the SRL immediately. A clear fall path is needed to assure positive locking of the SRL.
5. **Corrosion:** Use near salt water or other corrosive environments may require more frequent inspections and or servicing to assure corrosion damage does not affect the performance of the anchor.
6. **Chemical Hazards:** Solutions containing strong acids or alkalis or other caustic chemicals can cause damage to the anchor. Consult Safe Approach prior to installing around these substances.
7. **Electrical Hazards:** Do not install or use the tip over anchor anywhere the user may come into contact with electrical power lines or other electrical hazards.
8. **Training:** This equipment must be installed and used by persons who have been properly trained in its correct application and use. Installation and use of this equipment must be supervised by a qualified person as defined by OSHA.

3.3: Anchorage Strength

The anchorage to which this tip over anchor is attached must be capable of supporting the loads exerted on it by the anchor.

ANSI Z359.1 – Anchorages selected for personal fall arrest systems shall have a strength capable of sustaining static loads in the direction(s) permitted by the PFAS when in use of at least (A) 3,600 lbs when certification exists or (B) 5,000 lbs in absence of certification.

OSHA 1926.500 – Anchorages used for attachment of personal fall arrest systems shall be independent of any anchorage being used to

support or suspend platforms and capable of supporting at least 5,000 lbs per user attached, or designed, installed and used as part of a complete PFAS which maintains a safety factor of at least two and is under the supervision of a qualified person.

Load requirements for this anchor:

1. Single Point Attachment – 3,600 lbs
2. Lifeline Attachment Point – 5,000 lbs (see section 3.1)

Section 4: Product Selection

Product selection is as important as the proper use of the product itself. Poor judgment in product selection can have catastrophic results – therefore be sure to consult a competent person to ensure that the product that is issued is appropriate for the application and the specific location for which it is intended.

ANSI Z359.1-2007, Section 7 describes in detail the steps that should be taken with regard to the selection of fall arrest equipment. Safe Approach Inc. strongly encourages the use of this guide by those who employ users of fall arrest products. The ANSI standard recommends the following steps be taken:

- A workplace assessment by a competent person taking into account the presence of sources of extreme heat, chemicals, electrical hazards, environmental contaminants, sharp objects, abrasive surfaces; moving equipment and materials, unstable, uneven and slippery walking/working surfaces; unguarded openings; climatic/weather factors and foreseeable changes to these conditions. Care must be taken to ensure that the equipment that is selected is suitable for use where any of these conditions may exist.
- The workplace assessment must identify all paths of movement and the fall hazards along these paths. Care must be taken to ensure that there are proper anchorages at appropriate intervals along these paths to protect the users from these hazards without exposure to swing-fall conditions. The PFAS selected must limit the fall distance in order to avoid contact with the next lower level in the event of a fall.
- Anchorage connectors should be selected on the basis of their suitability for attachment to the anchor point to ensure a compatible and secure connection.
- The exposure of the anchorage connector to sharp edges, abrasive surfaces and other physical/structural hazards should be considered when evaluating compatibility.

- The competent person shall calculate the weight of all authorized persons when fully equipped to ensure that they are within the maximum capacity of the PFAS.
- A full body harness meeting the requirements of Z359 shall be selected, and it shall be sized to fit the user as per the manufacturer's instructions.
- Connectors that are selected shall be suitably sized and shaped so as to be compatible with the devices to which they will be attached.
- The competent person shall select the method of protecting the equipment from damage by workplace conditions, in accordance with the manufacturer's instructions.
- The competent person shall check the equipment instructions and markings to ensure compliance with the appropriate standards and will ensure that manufacturer's instructions; markings and warnings are read and followed.
- If the PFAS that is selected is made up of components from different manufacturers, the competent person will ensure that these components are compatible.

Section 5: Employer and User Training

5.1: Special notes for the Employer

As an employer, you may be obliged to provide Personal Protective Equipment (to include Personal Fall Arrest and Fall Protection Equipment) along with an appropriate amount of training to your employees so that they will be adequately prepared to use this equipment in the course of their work. If you are unsure about your duty to provide fall protection, consult Title 29 CFR, section 1926.501 which can easily be viewed at www.osha.gov. Another important resource for employers is the Consensus standard on Managed Fall Protection: ANSI Z359.2-2007.

Equally important is the subject of product/equipment selection. If you are obliged to provide fall protection equipment for your employees, be sure to consult with or appoint a competent or qualified person to select and prescribe equipment that is suitable to address the specific hazards which may be present on your job-site or in your facility. There are different products for different applications, and under many circumstances, these products are not interchangeable. If you have questions as to whether this product is suitable for your application, please contact Safe Approach Inc. for assistance.

It is important to note that improper use of fall arrest equipment can be just as dangerous as not using it at all. Failure to adequately train and supervise your employees may result in serious injury or death. It is critical to have a training program supported by documentation, refresher/remedial training and to establish best practices where the employment of all PPE is concerned.

5.2: User Training

It is the responsibility of the user of this equipment to read and fully understand these instructions before employing this product as part of a Personal Fall Arrest System (PFAS). Every user of fall protection should be provided a four to eight hour course of instruction for the Authorized Person. Training must also be provided in the use of each component of the user's PFAS and in the recognition of fall hazards. During the course of this training, the user may not be exposed to a fall hazard.

In the absence of a formal training program, Safe Approach Inc. has designed these instructional materials to act as an abbreviated course of instruction in an effort to give the user an over-view of fall arrest. This manual does not constitute a comprehensive training program, and it is not all-inclusive. Be sure to consult www.osha.gov for details on OSHA requirements for training. *Safe Approach Inc.* has additional services available to assist with end-user training – contact a *Safe Approach Inc.* sales professional for additional details.

As a minimum, training should address the following points:

- ABCD's of Fall Arrest (as discussed in Section 2).
- Recognition of fall hazards.
- Fall hazard elimination and control methods.
- Applicable fall protection regulations and standards.
- The responsibilities of designated persons (Authorized, Competent, Qualified).
- How to use written fall protection procedures.
- Inspection of equipment components and systems before use.
- Fall protection rescue procedures.
- Installation and use of products common to your duties, job-site or facility.

It is important to note that improper use of this equipment can be just as dangerous as not using it at all. Failure to read, understand and follow these instructions may result in serious injury or death.

Section 6: Fall Protection Plan

Title 29 CFR, section 1926.500 – 503 requires that an employer have a written fall protection plan where fall hazards exist. The best way to address a fall hazard is to eliminate it entirely or to employ a passive system to restrict access to the hazard (i.e. guardrails, netting, covers, etc.) Fall arrest products are the last line of defense in the hierarchy of fall protection, and should be used as a last resort by employees who have been thoroughly trained. The accepted fall protection hierarchy is as follows:

- Eliminate the fall hazard.
- Passive fall protection (guardrails, safety nets, barriers, etc.).
- Fall Restraint (prevent the worker from having access to the fall hazard by using a fixed lanyard which is short enough to restrict access to the hazard).
- Fall Arrest (utilizing Personal Fall Arrest Systems).
- Administrative Controls (use of warning lines, controlled access zones or monitors).

Two exceptional resources for developing a written fall protection plan are OSHA 1926 Subpart M, Appendix E and ANSI Z359.2-2007. All ANSI standards are available for purchase at www.ansi.org in the e-standards store.

6.1: The Fall Protection Plan

As a minimum, a fall protection plan should identify and/or address the following points:

- Any and all fall hazards which may exist on your job-site or in your facility.
- Steps that have been taken to eliminate each fall hazard.
- Equipment that has been or will be employed to address each fall hazard.
- Provisions for 100% continuous fall protection in the vicinity of all fall hazards.
- Training procedures for all authorized persons.
- Identification of acceptable anchorages for positioning, restraint and fall arrest.
- Clear-fall requirements.
- Use and egress from the system.
- Limitations on use of the system (maximum Free-fall, arrest force and maximum number and permitted locations of authorized persons who may use the system).

- Procedures for installation, use and removal of the system.
- Detailed instructions for inspection of systems and system components to include rejection criteria and replacement procedures.
- A detailed plan and procedures for the rescue of a worker who may be involved in a fall event.

6.2: Rescue Plan

In the event of a fall, OSHA requires that a prompt rescue be provided. In order to facilitate a prompt and effective rescue, it is important to have a Rescue Plan as part of your overall Fall Protection Plan.

The rescue plan should include detailed procedures for summoning a professional rescue agency (such as the local fire department) and/or for performing self-rescue or in-house rescue.

For detailed assistance in formulating and maintaining an effective rescue plan, see ANSI Z359.2-2007.

6.3: Suspension Trauma

Suspension Trauma (also referred to as orthostatic intolerance) is a condition that can arise from being suspended in a full-body harness for a prolonged period of time while awaiting rescue after a fall. Under these circumstances, blood circulation can be restricted allowing a large volume of blood to accumulate or pool in the veins of the user's legs. This condition can result in a variety of symptoms, some of which include light-headedness, loss of consciousness, difficulty concentrating and palpitations.

Following a rescue, Suspension Trauma can be so acute as to cause cardiac arrest when the large volume of un-oxygenated blood overwhelms the heart. This severity of this condition can be greatly reduced by using any one of a variety of devices offered to alleviate Suspension Trauma, such as *Safe Approach Inc. Suspension Trauma Straps* and by providing a prompt rescue in the event of a fall.

For additional details on Suspension Trauma, refer to OSHA's Safety and Health Information Bulletin SHIB 03-24-2004 at www.osha.gov.

Section 7: Product Inspection

Inspection is a critical element in the employment of any fall protection equipment. In order to protect authorized persons who are using this anchor it is important that the employer establishes procedures that have layers of inspection to ensure that any mechanical or functional deficiencies are recognized before the product is put into use.

7.1: Frequency

Before each use, visually inspect the roof anchor per the steps listed in section 7.2 and 7.3



WARNING: If this equipment has been subjected to forces resulting from a fall, it must be immediately removed from service and destroyed or returned to Safe Approach for possible repair.

7.2: Inspection Steps

OSHA 1910.66 and OSHA 1926.502 (as well as ANSI Z359.1-2007 and ANSI A10.32-2004) specifically require that the user inspect all fall protection equipment prior to each use to ensure proper function and to ensure that the equipment is in serviceable condition. Failure to do so may result in serious injury or death.

1. Inspect the roof anchor for physical damage. Look carefully for any signs of cracks, dents or deformities in the metal. If the anchor has been subjected to fall arrest forces the upright cylinder will be tipped over to one side. Do not use an anchor that has been subjected to fall arrest forces.
2. Inspect for signs of excessive corrosion.
3. Ensure the condition of the roof will support the roof anchor loads, see section 3.3. An anchor connected to rotten or deteriorated wood, steel or concrete should not be used.
4. If possible, check fasteners to ensure the roof anchor is still securely fastened to the roof.
5. Inspect each system component or subsystem connected to this anchor (i.e. SRL, full body harness, lanyard, lifeline, etc.) per associated manufacturer's instructions. Refer to associated manufacturers instructions for inspection procedures.
6. Record inspection date and results in a log book.

7.3: If inspection reveals a defective condition, remove the unit from service immediately and destroy or contact a factory authorized service center for possible repair.

OSHA Standards bear the force of law on a federal level. Some states have their own regulations which are locally enforced – check with your State Department of Labor for specific requirements which may be enforced in your area. OSHA Standards can be accessed for free at www.osha.gov.

Furthermore, this warranty is void if any product is changed or altered in any way, or if the product is used in a manner other than for which it is intended. This warranty only covers defects in material and workmanship; it does not cover conditions resulting from normal wear and tear, neglect abuse or accident.

29 CFR 1926 (Subpart M)

1926.500: Scope, Application and Definitions
1926.501: Duty to Have Fall Protection
1926.502: Fall Protection Systems Criteria & Practices
1926.503: Training Requirements

ANSI standards are voluntary consensus standards, and are generally regarded among the best practices where fall protection is concerned. Some states have incorporated one or more of the ANSI standards by reference, meaning that they may be enforced by some state or local agencies. Check with your State Department of Labor for further details. ANSI standards are available for purchase through the e-standards store at www.ansi.org.

ANSI Z359.1-2007: Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components

ANSI Z359.2-2007: Minimum Requirements for a Comprehensive Managed Fall Protection Program

ANSI Z359.12-2009: Connecting Components for Personal Fall Arrest Systems

ANSI A10.32-2004: Fall Protection Systems for Construction and Demolition Operations

Warranty

Safe Approach Inc. warrants to the buyer that all products are free from defect in material and workmanship at the time of shipment. Obligation under this warranty is limited to product replacement for the period of one (1) year from the date of installation or use by the owner, provided that this period shall not exceed two (2) years from the date of shipment. This warranty is not transferable. No other person or firm is authorized to assume or assign for Safe Approach Inc. any other warranty in connection with the sale or use of this product.

Appendix A
Installation Instructions
Ribbed Steel Roof Decks

Section A1: Application

A1.1: Use - Permanent or Temporary

A1.2: Structure:

The structure must be capable of meeting the strength requirements set out in section 3 on pages 12 – 15 of this manual.

Section A2: Inspection

A2.1: Inspection – Prior to installation inspect the roof anchor for physical defect or damage. Look for signs of cracks, dents or deformities in the metal as well as signs of excessive corrosion. Make sure the post is secured firmly upright on the plate. If the post is tipped over, the anchor has been subjected to a load and should not be installed. Return to the factory for inspection.

Section A3: Installation

A3.1: Location – Follow a predetermined roof anchor site plan or consult a competent person to determine proper and acceptable locations for the anchors prior to installation.

A3.2: Positioning – Position the roof anchor so that two rows of holes on the base plate are located as close to the center as possible of the decking high ribs. DO NOT use holes aligned with the valleys of the profile. The roof anchor may be oriented so that the long or short side is aligned parallel with the rib. Make sure ALL 16 holes of the two rows are usable.

A3.3: Attaching

FABLOK Fasteners – The anchor may be installed using (16) Textron Fablok fasteners. FAC-10-4 or larger fasteners may be used, please consult Textron specification documentation for part numbers and acceptable grip range for your application.

Step 1: Drill a 5/16"Ø pilot hole for all 16 locations aligned with the high rib, there should be 4 in each corner.

Step 2: Remove the anchor plate and place a strip of mastic tape over the pilot holes.

Step 3: Place the anchor plate back in position aligning the holes and install Fablok fasteners in all 16 holes.

Step 4: Tighten fasteners using a 5/8" box wrench to hold the base and a 5/16" 6 point nut driver on the head.



WARNING: All sixteen (16) Fablok fasteners (4 for each corner) must be used to secure the plate. Failure to do so could cause the plate to pull away from the roof during a fall causing serious injury or death.

Screws – The anchor may be installed using (16) ¼"-14 self drilling sheet metal screws (Tek screws). Screws must be ¼" diameter and long enough to leave (5) full threads protruding from underside of decking.

Step 1: See section A3.2 for positioning of the anchor, place a piece of mastic tape on the decking where each of the holes are lined up with the high rib.

Step 2: Place the base plate back on the decking so that the mounting holes line up with the mastic tape and install all (16) screws, (4) for each corner.



WARNING: All sixteen (16) self drilling screws (4 for each corner) must be used to secure the plate. Failure to do so could cause the plate to pull away from the roof during a fall causing serious injury or death.



CAUTION: Use care and follow manufacturer's instructions when tightening self drilling screws. Over torquing the screws will cause them to strip and will not provide sufficient holding force to resist fall arrest forces.

Appendix B
Installation Instructions
Built Up Membrane Over Ribbed Steel or Wood Deck

Section B1: Application

B1.1: Use - Permanent

B1.2: Structure:

The structure must be capable of meeting the strength requirements set out in section 3 on pages 12 – 15 of this manual. Maximum deck thickness including membrane, insulation and substrate thickness cannot be more than 9”.

Section B2: Inspection

B2.1: Inspection – Prior to installation inspect the roof anchor for physical defect or damage. Look for signs of cracks, dents or deformities in the metal as well as signs of excessive corrosion. Make sure the post is secured firmly upright on the plate. If the post is tipped over, the anchor has been subjected to a load and should not be installed. Return to the factory for inspection.

Section B3: Installation

B3.1: Location – Follow a predetermined roof anchor site plan or consult a competent person to determine proper and acceptable locations for the anchors prior to installation.

B3.2: Positioning – Position the roof anchor so that two rows of holes on the base plate are located as close to the center as possible of the decking high ribs. DO NOT use holes aligned with the valleys of the profile. The roof anchor may be oriented so that the long or short side is aligned parallel with the rib. Make sure ALL 16 holes of the two rows are usable.

B3.3: Attaching

Guided Toggle Bolts – The anchor may be installed using 4 of the guided toggle bolts, SAI part number P-00550-T9. The toggle bolts are designed to accommodate a maximum total material thickness including insulation and substrate (metal or wood) of 9”.

Step 1: Position the anchor (see section B3.2) and mark the desired hole locations. Using a probe long enough to penetrate all the way through the insulation thickness, probe in and around one of the hole locations all the way down through the insulation until you find the center of a high rib. Reposition the anchor if necessary and remark and probe (4) holes, (1) for each corner, until all (4) are located at the crown of the high rib. Also mark the (4) unused hole locations.

Step 2: Move the tip over anchor exposing the hole locations and drill (4) 1-1/6” diameter holes all the way through the insulation and roof substrate. Use the same drill and drill a counterbore hole approximately 1” deep at each of the remaining 4 unused hole locations so that the plate can rest flat on the membrane.

Step 3: Pull the toggle bolts out of the guides and insert a toggle guide into each hole in the roof. Each guide is marked “RISE” and “FALL”. Install the guides so that the “RISE” side is pointed toward the ridge and the “FALL” side is pointed toward the eave. If the roof is flat, align the “RISE” and “FALL” so that they are inline with the direction the ribs.

Step 4: Unscrew a bolt from the toggle and place the bolt through the base plate. Thread the bolt back into the toggle until 1/8” of threads protrude past the pivot. It is important to maintain this distance so that the toggle will pivot freely in one direction but will not be allowed to pivot in the other direction. Repeat for the other three locations.



WARNING: All four (4) toggle bolts (1 for each corner) must be used to secure the plate. Failure to do so could cause the plate to pull away from the roof during a fall causing serious injury or death.

Step 5: Position the toggles so that the longest part of the wing is pointed upward. Align the wings with the slots in the guides and lower the tip over anchor down on to the roof surface.

Step 6: Tighten each bolt to 36 – 60 in-lbs (3-5 ft-lbs).

Step 7: Weather proof the anchor by installing layers of membrane around the edges of the plate.

Appendix C

Installation Instructions

Concrete Roof Decks

Section C1: Application

C1.1: Use - Permanent or Temporary

C1.2: Structure:

The structure must be capable of meeting the strength requirements set out in section 3 on pages 12 – 15 of this manual.

Section C2: Inspection

C2.1: Inspection – Prior to installation inspect the roof anchor for physical defect or damage. Look for signs of cracks, dents or deformities in the metal as well as signs of excessive corrosion. Make sure the post is secured firmly upright on the plate. If the post is tipped over, the anchor has been subjected to a load and should not be installed. Return to the factory for inspection.

Section C3: Installation

C3.1: Location – Follow a predetermined roof anchor site plan or consult a competent person to determine proper and acceptable locations for the anchors prior to installation.

C3.2: Positioning – Position the roof anchor in the desired location on the roof.

C3.3: Attaching

CHEMICAL ANCHORS – The anchor may be installed using (4) ½” Stainless Steel or Galvanized Steel threaded rods and chemical adhesive. ITW/Redhead A7 acrylic adhesive or C6 epoxy adhesive or chemical anchoring from other manufacturers meeting equivalent specifications may be used. Minimum embedment required is 2-1/2”, minimum 4” thick concrete.

Step 1: Using the (4) larger hole locations in the roof anchor base plate as a guide, mark all (4) anchor locations on the roof.

Step 2: Drill a 9/16”Ø hole at each location a minimum of 2-1/2” deep.

Step 3: Making sure to wear face protection, clean the hole using a hole brush and low pressure air. Follow installation instructions provided with chemical anchor for any brand specific cleaning requirements.

Step 4: Inject adhesive in the hole, starting at the bottom, until it is approximately 1/2 to 2/3 full.



CAUTION: When using new adhesive cartridge, discard the first 3 trigger pulls of adhesive before filling the first hole to make sure the 2 parts are fully mixed.

Step 5: Slowly twist a threaded rod into each hole. Place the base plate over the threaded rods so that they align properly with the holes in the plate. DO NOT install the nuts yet or disturb the rods again until the proper cure time has passed. Consult the manufacturer’s instructions to determine proper cure time.

Step 6: Once the adhesive has cured, install the flat washers and nuts and tighten to 30 ft-lbs.



WARNING: All four (4) chemical anchors must be used to secure the plate. Failure to do so could cause the plate to pull away from the roof during a fall causing serious injury or death.

MECHANICAL ANCHORS – The anchor may be installed using (4) ½” Stainless Steel wedge anchors. Simpson Wedge All® or equivalent may be used. Minimum embedment required is 3-3/8”, minimum 6” thick concrete.

Step 1: Using the (4) larger hole locations in the roof anchor base plate as a guide, mark all (4) anchor locations on the roof.

Step 2: Drill a 1/2”Ø hole at each location a minimum of 4” deep.

Step 3: Making sure to wear face protection, clean the hole using a hole brush and low pressure air.

Step 4: Place the roof anchor on the roof and align the mounting holes with the drilled holes. Thread a nut onto each of the anchors so that approximately ½” of stud is protruding out the top. Tap an anchor into each of the holes so that the washer and nut sit flat on the base plate.

Step 5: Tighten each of the nuts to the recommended torque spec listed in the manufacturer's instructions.



WARNING: All four (4) mechanical anchors must be used to secure the plate. Failure to do so could cause the plate to pull away from the roof during a fall causing serious injury or death.

Appendix D ***Installation Instructions*** ***Plywood Roof Decks***

Section D1: Application

D1.1: Use - Temporary

D1.2: Structure:

The structure must be capable of meeting the strength requirements set out in section 3 on pages 12 – 15 of this manual.

Section D2: Inspection

D2.1: Inspection – Prior to installation inspect the roof anchor for physical defect or damage. Look for signs of cracks, dents or deformities in the metal as well as signs of excessive corrosion. Make sure the post is secured firmly upright on the plate. If the post is tipped over, the anchor has been subjected to a load and should not be installed. Return to the factory for inspection.

Section D3: Installation

D3.1: Location – Follow a predetermined roof anchor site plan or consult a competent person to determine proper and acceptable locations for the anchors prior to installation.

D3.2: Positioning – Position the roof anchor in the desired location on the roof. All mounting holes must be located over the wood decking and NOT directly over a roof support or beam that would interfere with the mounting screws. An exception would be for wood structural members. Mounting screws may be driven into wood rafters or trusses.

NOTE: The roof anchor must be attached directly to wood decking. If roofing material and insulation are covering the wood, the use the tip over anchor for built up membrane applications, See Appendix B.

D3.3: Attaching

LAG SCREWS – The anchor may be installed using (16) ¼" Grade 2 or better lag screws. They must be ¼" diameter and have a length that leaves at least 5 full threads protruding from the underside of the substrate after installation.

Step 1: Position the roof anchor in the desired location and drill (4) 3/16"Ø diameter pilot holes through each set of mounting holes (for a total of 16 holes). Use the outermost set of holes if possible.

Step 2: Align the pilot holes with the holes in the base plate and install a lag screw in each pilot hole (for a total of 16 screws).



WARNING: All sixteen (16) mounting screws (4 for each corner) must be used to secure the plate. Failure to do so could cause the plate to pull away from the roof during a fall causing serious injury or death.



CAUTION: Use care and follow manufacturer's instructions when tightening lag screws. Over torquing the screws will cause them to strip and will not provide sufficient holding force to resist fall arrest forces.



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