



•Fall Protection •Training •Netting •PPE

# 18 INCH ROOF ANCHOR INSTRUCTION MANUAL



**These Instructions Apply to the Following Model(s):**  
ANCHOR18PLATE, ANCHOR18POST, ANCHOR24BACKER

**IMPORTANT:**

Do not skip this instruction manual. Read the instruction manual carefully before using the equipment. Failure to do so may cause serious injury or death. These instructions serve as the Manufacturer’s Instructions and are to be used as part of an employee training program for the system, as required by OSHA.

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**Overview**

You have just purchased your very own Palmer Safety Fall Protection 18 Inch Roof Anchor. This manual must be read and understood in its entirety, whereas any specified training course on fall protection can be utilized to provide the necessary knowledge.

All of these instructions need to be made available to the user of the equipment. The user needs to understand how the 18 Inch Roof Anchor works and how to use it safely. They also need a basic understanding of fall safety equipment used in combination with the 18 Inch Roof Anchor, such as harnesses and lanyards.

**Safety Standards**

All applicable OSHA 1926 Subpart M construction standard, OSHA 1910 general industrial standard, ANSI Z359.18-2017, and ANSI A10.32-2012 standards for fall protection are followed when this product is used as instructed, depending on application (see chart on page 3). Standards are regulated depending on the type of work being done. You can review all regulations at regulatory agencies for more information on fall protection systems, including any of the state-specific regulations.

18 Inch Roof Anchors are not compliant with ANSI/IWCA I-14.1-2001 Section 9 requirements for tie-back/suspension anchorage for window washing or facade maintenance equipment.

18 Inch Roof Anchors are not compliant with CalOSHA section 3291 (f) for roof tie-back/suspension anchorages, which are required on all buildings in California above 36’ (or 3 stories), with certain exceptions.

Contact Palmer Safety for more information and for information on anchors compliant with CalOSHA and/or IWCA standards.

Product Compliance	ANSI Z359.18-2017 & A10.32	OSHA 1910 & OSHA 1926 Subpart M
Wood Installations	Not Compliant	Compliant
Metal Installations	Not Compliant	Compliant
Concrete Installations	Compliant	Compliant
Backer Plate Installations	Compliant	Compliant
Welding Installations	Compliant	Compliant

## Worker Definitions

**NOTE:** It is important to know the definition of those who work near or who may be exposed to fall hazards.

**Qualified Person:** A person with accreditation for this position who has sufficient experience or standing in their industry. They are responsible for reviewing the effectiveness of fall prevention and rescue procedures.

**Competent Person:** A fall safety coordinator is a person who has been trained to manage all aspects of a company's fall safety program. This includes the actual regulation, the management thereof and its application. A person tasked with identifying existing or foreseeable hazards. They have the power to temporarily stop work to address any concerns they might have.

**Authorized Person:** An employee who's area of responsibility includes areas where potential or existing fall hazards exist. These employees need to be trained to understand what it takes to work safely around these hazards.

**Qualified or Competent person on jobsite is responsible for training and inspection of 18 Inch Roof Anchor. Please contact your local Palmer Safety Specialist if you have questions or need training. We can provide training on the jobsite.**

## Applications

**WARNING:** Using the equipment in ways other than its intended purpose may result in severe injury or death. Maximum 1 attachment per connection point. This anchor is suitable for use with HLLs. A Qualified Person must supervise the design, set-up, installation, and use of HLLs.

**Fall Arrest:** The 18 Inch Roof Anchor, which can be used in Personal Fall Arrest (PFAS) applications, is for use by only 1 person and must be used with the appropriate supporting structure. The supporting structure must also withstand loads applied in the advised directions of at least 5000 lbs. Maximum freefall height is 6 feet, or up to 12 feet when in combination with a harness that has been tested for such use. The D-ring needs to be in the dorsal position.

**Restraint:** The 18 Inch Roof Anchor can be utilized in Restraint systems. Restraints are used to ensure workers do not get too close to the edge of any fall hazards. Make sure to account for the full length of the lanyard or SRL that you plan on using. The supporting structure must also withstand loads applied in the advised directions of at least 1000 lbs. No item shall be allowed to fall without restraint. Restraint systems can only be used on surfaces where slopes are up 4/12. D-rings that can be used: Dorsal, Chest, Side, Shoulder.

**Work Positioning:** 18 Inch Roof Anchor can be utilized in Work Positioning applications. Work Positioning systems support a worker so they can freely work using both hands. The supporting structure must also withstand loads applied in the advised directions of at least 3000 lbs. Maximum freefall height is 2 feet. D-rings that can be used: Side.

**Rescue / Confined Space:** 18 Inch Roof Anchor can be utilized in Rescue/Confined Space applications. Rescue systems act to recover a worker in a safe manner from a confined space or after a fall. Rescue systems can be configured in a variety of ways depending on the rescue. The supporting structure must also withstand loads applied in the advised directions of at least 3000 lbs. D-rings that can be used: Shoulder, Chest, Dorsal.

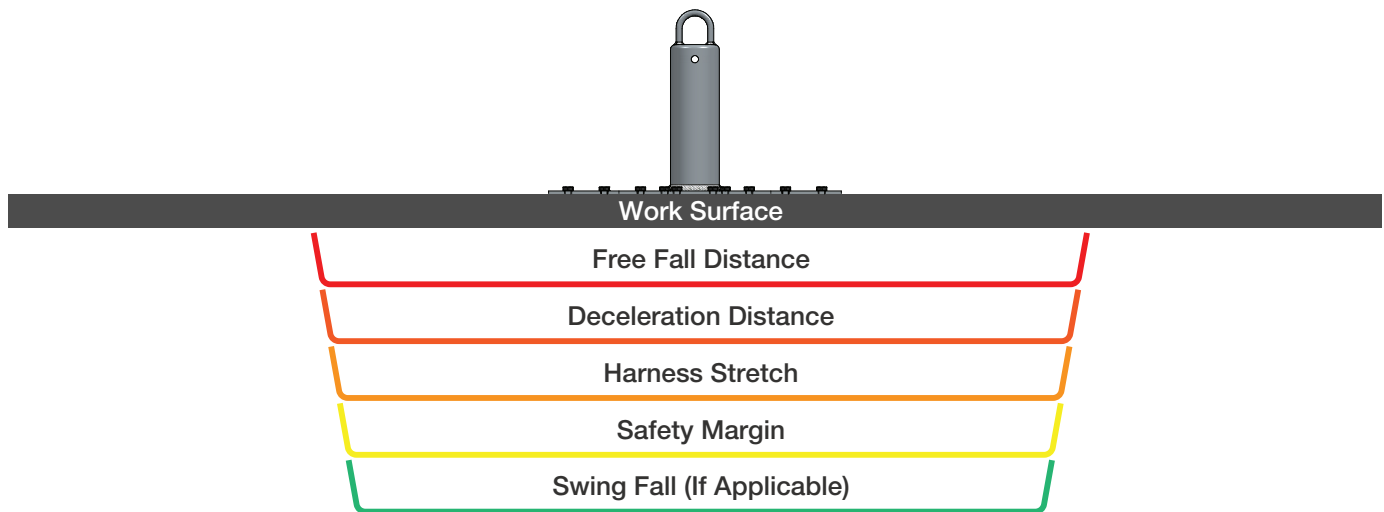
**TOTAL user weight capacity range (including person, clothing, tools, and equipment) is 130-420 lbs.**

## Limits

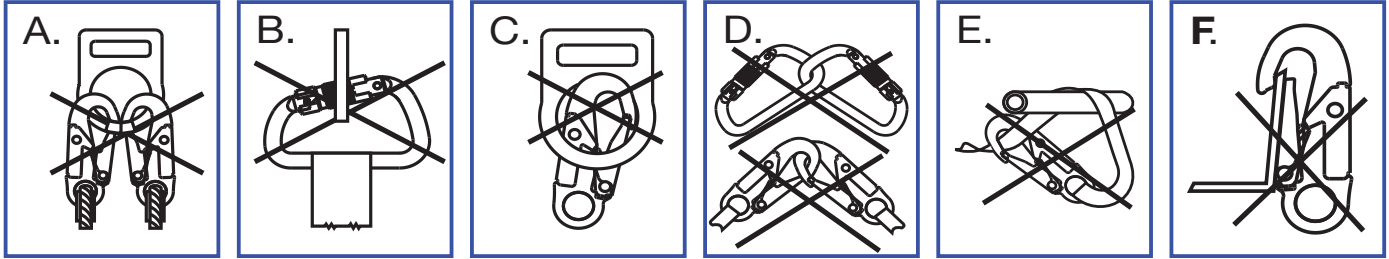
**Fall Clearance:** There should be enough clearance below the anchorage connector to arrest a fall before the person strikes the ground or an obstacle. When figuring out how far people might fall, there needs to be a safety buffer of 2 feet. People also need to consider the distance they are slowing down at, how tall they are, the length of their lanyard or SRL. They should also think about harness stretch and any other factors that apply.

Diagram shown below is a fall clearance calculation **EXAMPLE ONLY**.

$$\text{TOTAL FALL CLEARANCE} = \text{FREE FALL} + \text{DECELERATION} + \text{STRETCH} + \text{SAFETY MARGIN} + \text{SWING FALL}$$



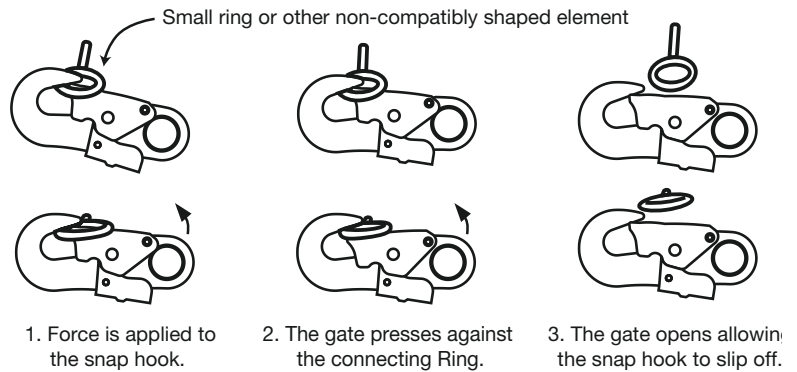
**Compatibility:** To avoid interference when connecting to the 18 Inch Roof Anchor, there must be enough space between the hook and its attachment point. This is known as “rolling out” and can cause the gate on the hook to inadvertently open and release. All components must be compatible with the 18 Inch Roof Anchor and must be approved by a Competent Person. All connectors should be self-closing and self-locking, and should withstand a minimum load of 3,600 lbs.



- A. Two or more connectors should never be attached to a single D-ring.
- B. Never attach a connector that could result in a load on its gate.
- C. Connectors should not be connected in a false engagement. It should be visually confirmed that the connector is fully engaged to the anchor point. Avoid conditions that allow for features that protrude from the connectors to catch on the anchor, giving a false sense of being connected.
- D. Connectors should not be connected to each other.
- E. Connectors should not be connected directly to the webbing or to the rope lanyard or tie back, unless specifically allowed by the manufacturer.

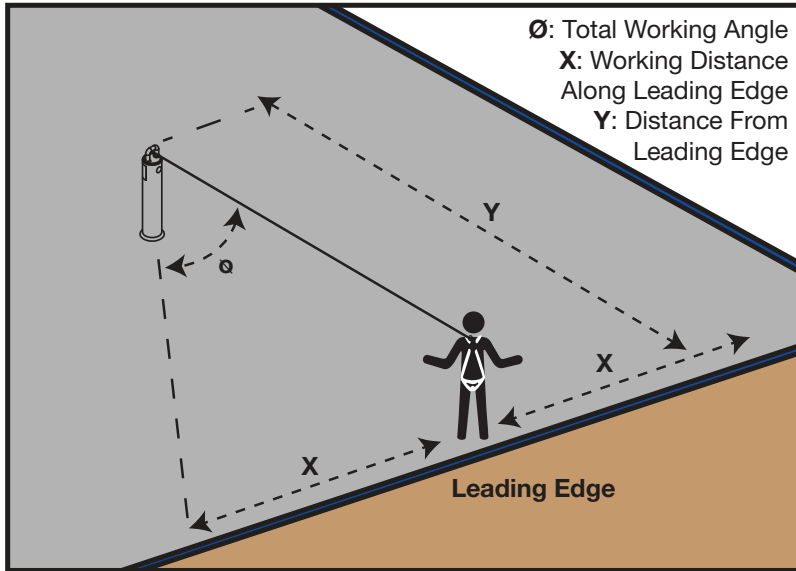
F. Connectors should not be connected to any object which does not allow the connector gate to close or lock. Anchor shapes that allow roll out to occur should never be used for connection. If the anchor, to which the snap hook or carabiner is attached, is under sized or irregular in shape, then this may allow for the gate of the connector to come in contact with the anchor, thereby causing the connector to open up and possibly disengage from the anchor. This is known as roll out of the connector. See Diagram 2.

**Diagram 2 - Unintentional Disengagement (roll-out)**



G. Do not use connectors on an anchorage object as shown in figure A to F.

**Correct Anchorage Positioning:** This chart details allowable working zones required to reduce risk of swing falls and improper side loading. ALWAYS adhere to information specified by chart.



Anchor Distance From Leading Edge (Y)	Working Distance Along Roof Edge (Either Direction) (X)	Working Angle From Perpendicular (Ø)
6'	8'	53°
10'	9' - 9"	45°
15'	11' - 7"	38°
20'	13' - 3"	33°
25'	14' - 6"	30°
30'	16'	28°
35'	17' - 2"	26°
40'	18' - 3"	24°
45'	19' - 4"	23°
50'	19' - 10"	21°
55'	21' - 4"	21°
60'	22' - 3"	21°

For example, if the anchorage connector is 6' from the leading edge (Y), the working distance (X) is 8' in each direction from the perpendicular, which translates to a 53° working angle.

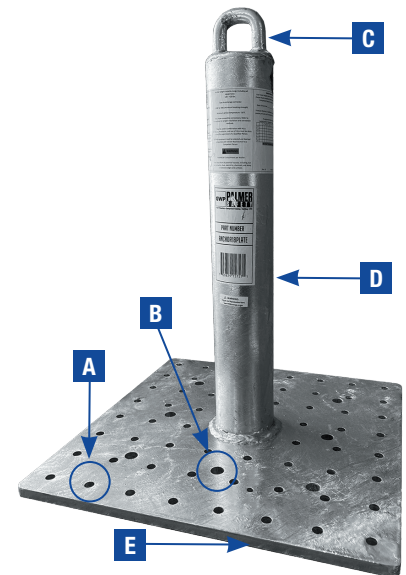
**Swing Falls:** When using or installing any anchors, think about eliminating swing fall hazards. Swing falls happen when the anchor point is not directly over the object being secured. Always make your anchors as close to perpendicular as possible to the load. Swing falls can increase the chances of serious injury or death if there is a fall.

## Product Components

- A. Wood/Metal Fastener Installation Holes, 60 each
- B. Concrete Fastener Installation Holes, 8 each
- C. Connection Point
- D. Anchor Post
- E. Base Plate

## Product Specifications

Type A Anchorage  
 Maximum 1 connection per anchor.  
 Worker Weight Range: 130-420 pounds including all tools and equipment.  
 Materials: Galvanized Steel  
 Minimum Service Temperature: -30°F  
 5,000 lb MBS (minimum breaking strength)



Item ID	Post	Description	Base
ANCHOR18PLATE	18"	18 Inch Roof Anchor with Plate	16" X 16"
ANCHOR18POST	18"	18 Inch Weld on Roof Anchor Post	N/A
ANCHOR24BACKER	N/A	Backer Plate for 18 & 24 Inch Roof Anchor with Plate	12" X 12"

## Notes

- 1.) Make sure all workers have read and understand the warnings associated with this equipment.
- 2.) Make sure all workers are using other fall protection methods while installing this roof anchor.
- 3.) Check to be sure the intended installation location is free from all damage and will support the loads applied by the anchor, as determined by a Competent Person.
- 4.) Consider the possibility of swing fall when choosing the installation location. The chances of swing fall must be eliminated or reduced as much as possible.
- 5.) Make only compatible connections as determined by a Competent Person.
- 6.) When installing the 18 Inch Roof Anchor, every fastener hole relevant to the installation must be used. All fasteners must be fully embedded in the substrate but not overtightened.
- 7.) The 18 Inch Roof Anchor may be loaded in any direction as long as the anchor is installed according to these instructions.
- 8.) The 18 Inch Roof Anchor may be installed on roofs with a slope of flat to sheer. If the anchor is installed past sheer (such as on the underside of a beam) the installation must use a backer plate.

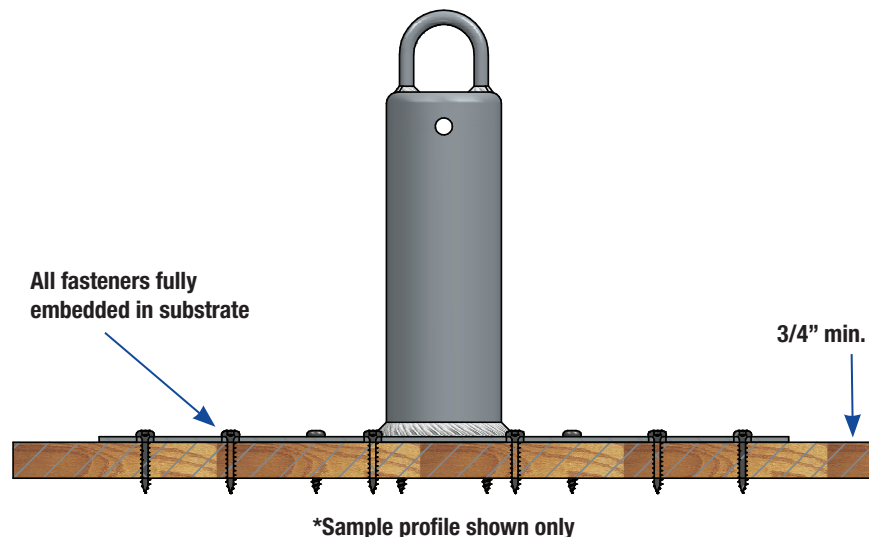
## Installation and Use

### For Wood Installation (part no. ANCHOR18PLATE)

Minimum substrate requirement is 3/4" CDX.

Fastener requirement is 60 each #14-10 x 2" minimum length wood deck screws with bonded sealing washer.

- 1.) Position the 18 Inch Roof Anchor at the location chosen for installation.
- 2.) Install all 60 fasteners FULLY into the substrate. Do not overtighten.

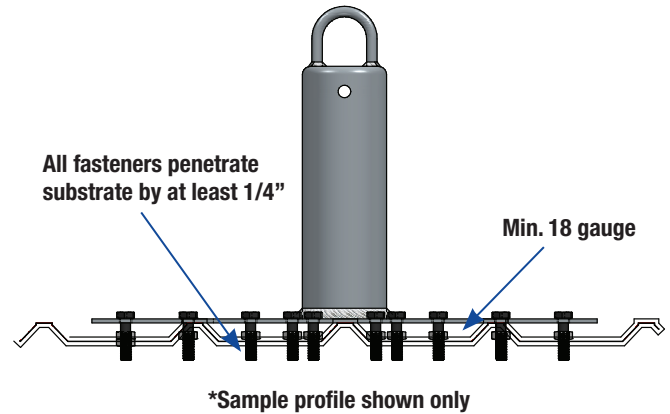




**For Metal Installation (part no. ANCHOR18PLATE)**

Minimum substrate requirement is 18 gauge or 20 gauge if reinforced with Roof Anchor Spanner plate (part no.: ANCHORSPANNER, contact Palmer Safety for more information).

Fastener requirement is 60 each #14 – 14 x 2” minimum length metal deck screw with bonded sealing washer. Longer screws might be necessary to fully penetrate the substrate. Fasteners must penetrate the metal deck by a minimum of 1/4”.

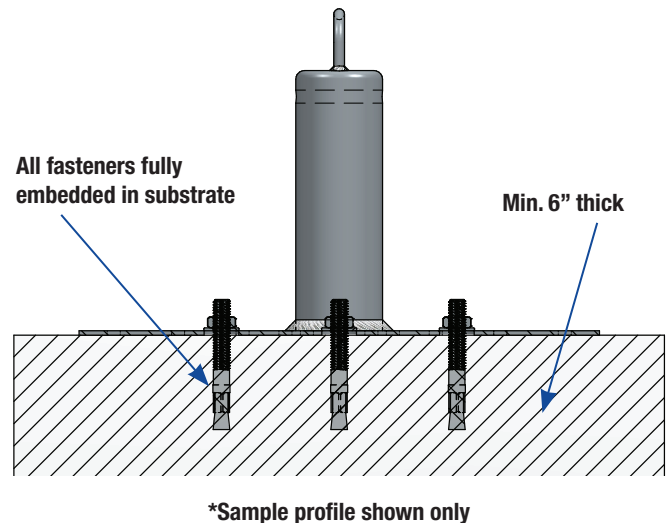


- 1.) Position the 18 Inch Roof Anchor at the location chosen for installation.
- 2.) Install all 60 fasteners FULLY into the substrate. Do not overtighten.

**For Concrete Installation (part no. ANCHOR18PLATE)**

Minimum substrate requirement is 6” thick and 2,500 psi.

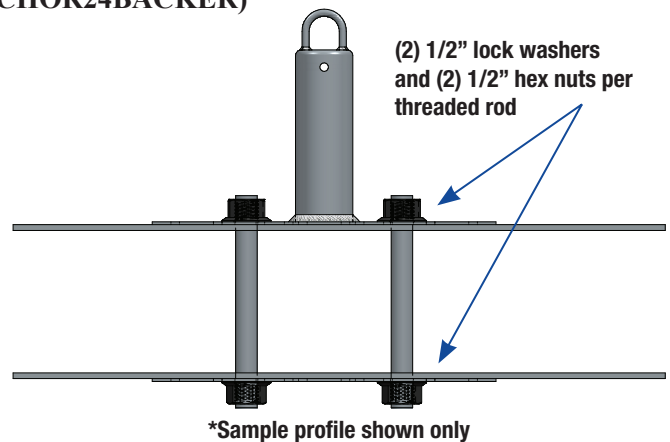
Fastener requirements is 8 each 1/2” x 3” concrete bolts.



- 1.) Position the 18 Inch Roof Anchor at the location chosen for installation. (Must be minimum of 8” from fall hazard)
- 2.) Install all 8 fasteners fully into the substrate. (Follow fastener manufacturer’s instructions for fastener installation.)

**Backer Plate Installation (part no. ANCHOR18PLATE & ANCHOR24BACKER)**

Compatible with beams between 6” and 8”. You may install the 18” Roof Anchor with Backer Plate on structural members other than I-Beams. A Competent Person must determine if the other structural member is compatible the 18” Roof Anchor with Backer Plate.

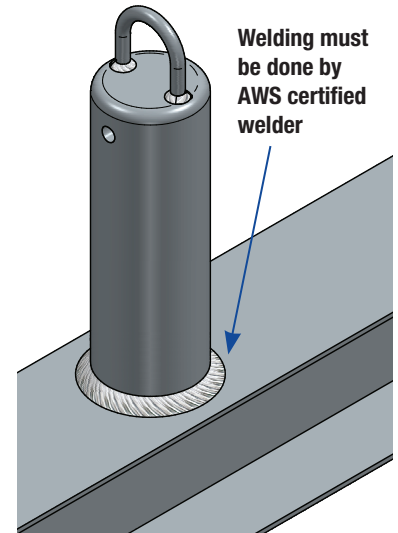


- 1.) Position the 18 Inch Roof Anchor at the location chosen for installation.
- 2.) Connect Backer Plate to 18” Roof Anchor with 4 each 1/2” threaded rod, 2 each 1/2” lock washers and 2 each hex nuts required per threaded rod.
- 3.) Tighten nuts and make sure the 18” Roof Anchor is fully tightened against the backer plate.
- 4.) Flatten threads on each threaded rod to prevent the nuts from backing out.



### **Weld on Installation (part no. ANCHOR18POST)**

18 Inch Roof Anchor Post must be installed by an AWS certified welder, following all applicable regulations. Fillet weld: 5/16” and minimum beam flange width is 3-1/2”.



### **Maintenance, Cleaning, and Storage**

If 18 Inch Roof Anchor fails inspection in any way, immediately remove it from service, and contact Palmer Safety to inquire about its return or repair.

Cleaning after use is important for maintaining the safety and longevity of 18 Inch Roof Anchor. Remove all dirt, corrosives, and contaminants from 18 Inch Roof Anchor before and after each use. If 18 Inch Roof Anchor cannot be cleaned with plain water, use mild soap and water, then rinse and wipe dry. NEVER clean 18 Inch Roof Anchor with corrosive substances.

Prior to use, store equipment where it will not be affected by heat, light, excessive moisture, chemicals, or other degrading elements.

### **Inspection**

- 1.) Anchor should be inspected before each use.  
**If any damage is found or system is involved in a fall remove from jobsite immediately.**
- 2.) Anchor should be inspected by a Competent Person annually.
- 3.) All inspections should be documented.

**Palmer Safety would be glad to help with any inspections.**

## Inspection Log

<b>SERIAL NUMBER:</b>													
<b>MODEL NUMBER:</b>													
<b>DATE PURCHASED:</b>							<b>DATE OF FIRST USE:</b>						

	J	F	M	A	M	J	J	A	S	O	N	D
YR												
YR												
YR												
YR												
YR												

Product lifetime is indefinite as long as it passes pre-use and Competent Person inspections. User must inspect prior to EACH use. Competent Person other than user must complete formal inspection annually. Competent Person to inspect and initial.

This inspection log must be specific to one 18 Inch Roof Anchor. All inspection records must be made visible and available to all users at all times.

If equipment fails inspection or is involved in a fall **REMOVE FROM SERVICE IMMEDIATELY.**

INSPECTION DATE	INSPECTION ITEMS NOTED	CORRECTIVE ACTION	MAINTENANCE PERFORMED
<b>Approved by:</b>			
<b>Approved by:</b>			
<b>Approved by:</b>			
<b>Approved by:</b>			

## Safety Information

**WARNING:** Failure to understand and comply with safety regulations may result in serious injury or death. Regulations included herein are not all-inclusive, are for reference only, and are not intended to replace a Competent Person's judgment or knowledge of federal or state standards.

**Notes:**

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