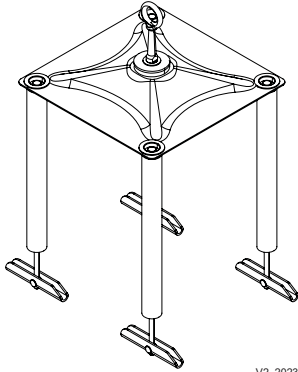




022-4090

Membrane Roof Anchor Manual



V2, 2023 Copyright Safewaze: 220-00095

APPLICABLE SAFETY STANDARDS

When used according to instructions, Safewaze Anchors meet OSHA 1926.502, 1910.140, and 1910.66 regulations. Applicable standards and regulations depend on the type of work being done and may include state-specific regulations. Refer to local, state, and federal requirements for additional information on the governing of occupational safety regarding Personal Fall Arrest Systems (PFAS).

⚠️WARNING:

The manufacturer's instructions must be provided to users of this equipment. The user must follow the manufacturer's instructions for each component of the system. The user must read and understand these instructions before using this equipment. Manufacturer's instructions must be followed for proper use and maintenance of this equipment. The user must understand how to safely and effectively use the 022-4090 roof anchor and all equipment used in conjunction with 022-4090. Alterations to this product, misuse of this product, or failure to follow instructions may result in serious injury or death. Avoid moving machinery, sharp and/or abrasive edges, and any other hazard that could damage or degrade the component.

Do not throw away instructions!
Read and understand instructions before using equipment!

⚠️IMPORTANT:

- Please refer to this manual for essential instruction on the use, care, or suitability of this equipment for your application. Contact Safewaze for any additional questions.
- Only Safewaze, or entities authorized in writing by Safewaze, may make repairs to Safewaze fall protection equipment.
- Record all important product information below prior to use. Documentation of all Competent Person annual inspections is required in the Inspection Log.

SPECIFICATIONS

- Capacity: The Membrane Roof Anchor is designed to provide a fall protection anchorage for a single user with a maximum weight of 130 to 310 lbs. (59-141 kg) including any tools, clothing, accessories, etc.
- Minimum Breaking Strength (MBS) is 3,600 lbs. (16 kN)
- Accommodates roof thicknesses from 3" to 12".

INTRODUCTION

Thank you for purchasing a Safewaze Membrane Roof Anchor. This manual must be read and understood in its entirety and used as part of an employee training program as required by OSHA or any applicable state agency. This manual and any other instructional material must be available to the user of the equipment. Every user must be trained in the inspection, installation, operation, and proper usage of the anchor.

USER INFORMATION

Date of First Use: _____
 Serial Number: _____
 Trainer: _____
 User: _____

WORKER CLASSIFICATIONS

Read and understand the definitions of those who work in proximity of, or may be exposed to, fall hazards:

Qualified Engineer: "Qualified Engineer" means a person with a Bachelor of Science in Engineering degree from an accredited college or university. They are able to assume personal responsibility for the development and application of engineering science and knowledge in the design, construction, use, and maintenance of their projects.

Qualified Person: "Qualified Person" means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated their ability to solve or resolve problems relating to the subject matter, the work, or the project.

Competent Person: "Competent Person" means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Authorized Person: "Authorized Person" means a person approved or assigned by the employer to perform a specific type of duty or duties, or to be at a specific location or locations, at the jobsite.

It is the responsibility of a Qualified Person or Engineer to supervise the jobsite and ensure safety regulations are complied with.

LIMITATIONS

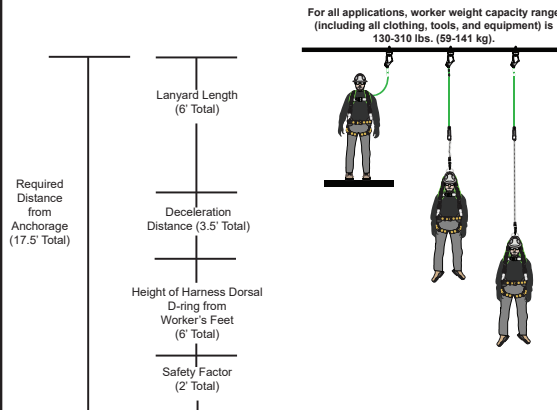
Always select a lanyard and anchor point location that limits free fall and swing fall as much as possible. A free fall of more than 6 ft. could cause excessive arrest forces that could result in serious injury or death.

Anchorage for the attachment of a Personal Fall Arrest System shall support a minimum 3,600 lbs. (16 kN) or be designed with a safety factor of two to one by a Qualified Person.

Fall Clearance: There must be sufficient clearance below the anchorage connector to arrest a fall before the user strikes the ground or an obstruction. When calculating fall clearance, account for a MINIMUM 2' safety factor, deceleration distance, user height, length of lanyard/SRL, and all other applicable factors (Figure 1).

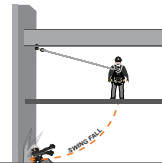
FIGURE 1: FALL CLEARANCE DIAGRAM

*This diagram is an example of fall clearance calculation ONLY.



Swing Falls: Prior to installation or use, make considerations for eliminating or minimizing all swing fall hazards. Swing falls occur when the anchor is not directly above the location where a fall occurs. Always work as close to, or in line with, the anchor point as possible. Swing falls significantly increase the likelihood of serious injury or death in the event of a fall (Figure 2)

FIGURE 2: SWING FALL



ANCHORAGE INSTALLATION LOCATION

A Qualified Person or Engineer must conduct an analysis of the workplace and ensure the anchorage location is capable of withstanding loads from a fall. The TieLink Anchor should be installed 6 feet from an edge. An anchorage location selected for a Personal Fall Arrest System (PFAS) must have a strength capable of sustaining a static load applied in the direction permitted by the PFAS of at least:

- Two times the maximum arrest force permitted when certification exists, or
- 3,600 lbs. (16 kN) or be designed with a safety factor of two to one in the absence of certification by a Qualified Person.

ALLOWED ANCHOR APPLICATIONS

The Membrane Anchor is for use as a single point anchor or with VLL systems. Not for HLL use.

Personal Fall Arrest: Safewaze Anchors are designed as an anchor point to support a maximum of 1 PFAS when utilized for fall protection applications. The structure to which the anchor is attached must withstand loads applied in the directions permitted by the system of at least 5,000 lbs. (22 kN) or be designed with a safety factor of two to one. Maximum allowable freefall is based on the connector used.

Restraint: Safewaze Anchors are authorized for use in Restraint applications. The structure to which the anchor is attached must withstand loads applied in the directions permitted by the system of at least 1,000 lbs. NO free fall is permitted. Restraint systems may only be used on surfaces with slopes up to 4/12 (vertical/horizontal). For Restraint applications, the allowable attachment points to the harness are Dorsal, Front/Sternal, Side, and Shoulder D-rings.

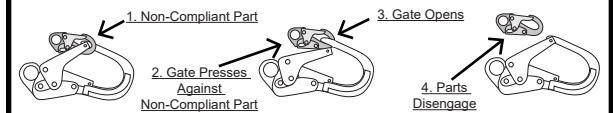
Work Positioning: Safewaze Anchors are authorized for use in Work Positioning applications. Work Positioning allows a worker to be supported during suspension while freeing both hands to conduct work operations. The structure to which the Anchor is attached must withstand loads applied in the directions permitted by the system of at least 3,000 lbs. Maximum allowable free fall is 2' ft. For positioning applications, the allowable attachment points to the harness are the Side D-rings.

Rescue/Confined Space: Safewaze Anchors are authorized for use in Rescue/Confined Space applications. Rescue systems are utilized to safely recover a worker from a confined location or after exposure to a fall. Composition of rescue systems can vary based upon the type of rescue involved. The structure to which the Anchor is attached must withstand loads applied in the directions permitted by the system of at least 3,100 lbs. NO free fall is permitted. For rescue applications, the allowable attachment points to the harness are Dorsal, Front/Sternal, and Shoulder D-rings.

COMPATIBILITY OF COMPONENTS/CONNECTORS

- Safewaze equipment is designed for, and tested with, associated Safewaze components or systems. If substitutions or replacements are made, ensure all components meet the applicable ANSI requirements. Read and follow manufacturer's instructions for all components and subsystems in your PFAS. Not following this guidance may jeopardize compatibility of equipment and possibly affect the safety and reliability of the system.
- Connectors are compatible with connecting elements when they have been designed to work together in such a way that their sizes and shapes do not cause their gate mechanisms to inadvertently open regardless of how they become oriented.
- Connectors (hooks, carabiners, and D-rings) must be capable of supporting at least 5,000 lbs. (22 kN).
- Connectors must be compatible with the anchorage or other system components.
- Do not use equipment that is not compatible. Non-compatible connectors may unintentionally disengage (Figure 3).
- Connectors must be compatible in size, shape, and strength.
- Self-locking snap hooks and carabiners are required by OSHA guidelines.
- Some specialty connectors have additional requirements. Contact Safewaze if you have any questions about compatibility.

FIGURE 3: UNINTENTIONAL DISENGAGEMENT



Using a connector that is undersized or irregular in shape (1) to connect a snap hook or carabiner could allow the connector to force open the gate of the snap hook or carabiner. When force is applied, the gate of the hook or carabiner presses against the non-compliant part (2) and forces open the gate (3). This allows the snap hook or carabiner to disengage (4) from the connection point.

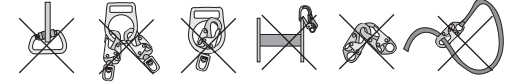
MAKING CONNECTIONS

Snap hooks and carabiners used with this equipment must be double locking and/or twist lock. Ensure all connections are compatible in size, shape, and strength. Do not use equipment that is not compatible. Ensure all connectors are fully closed and locked.

Safewaze connectors (hooks, carabiners, and D-rings) are designed to be used only as specified in each product's manual. See Figure 4 for examples of inappropriate connections. Do not connect snap hooks and carabiners:

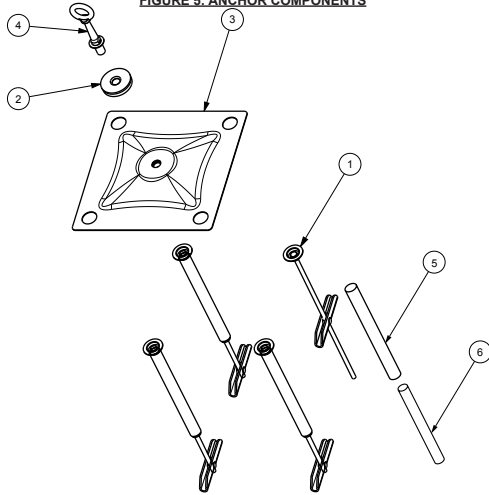
- To a D-ring to which another connector is attached.
- In a manner that would result in a load on the gate (with the exception of tie-back hooks).
- In a false engagement, where features that protrude from the snap hook or carabiner catch on the anchor, and without visual confirmation seems to be fully engaged to the anchor point.
- To each other.
- By wrapping the web lifeline around an anchor and securing to lifeline, except as allowed for tie-back models.
- To any object which is shaped or sized in a way that the snap hook or carabiner will not close and lock, or that roll-out could occur.
- In a manner that does not allow the connector to align properly while under load.

FIGURE 4: INAPPROPRIATE CONNECTIONS



Large throat snap hooks must not be connected to standard size D-rings or similar objects which will result in a load on the gate if the hook or D-ring twists or rotates, unless the snap hook complies with ANSI Z359.1-2007 or ANSI Z359.12 and is equipped with a 3,600 lb. (16 kN) gate.

FIGURE 5: ANCHOR COMPONENTS

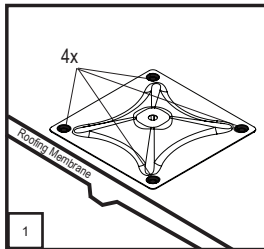


Anchor Components	Materials	
1	Toggles	Zinc Plated Steel, Galvanized Steel, Stainless Steel
2	Retro-Washer	Stainless Steel
3	Membrane Plate	Stainless Steel
4	Eye-bolt Assembly	Stainless Steel
5	Tube	PVC
6	Insulation	Closed Cell Foam

PRIOR TO USE

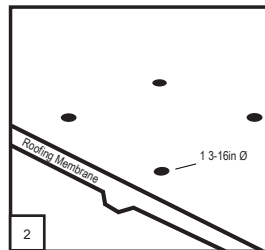
- The user should confirm no parts are missing, such as the toggle nuts or eye-bolt assembly.
- Check the eye-bolt before each use to ensure it is tight.
- The Labeling should be inspected to ensure it is present and fully legible.
- If the inspection indicates any defects, the anchor must be removed from service.

INSTALLATION

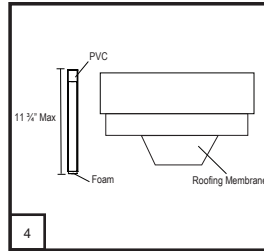
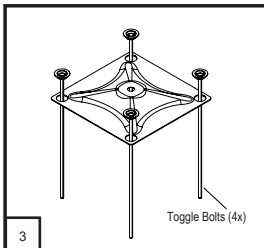


1. Mark the roof for installation using the plate mounting holes as a template.

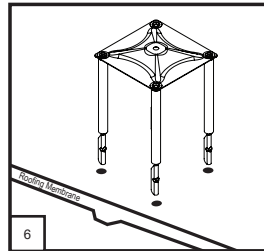
2. Drill four holes (1 3/16 in. diameter) through entire roof sheathing and clean away any debris.



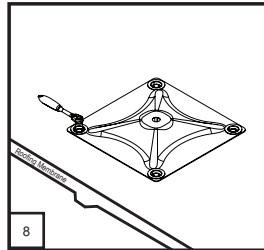
3. Install the four toggle bolts through the holes in the plate.



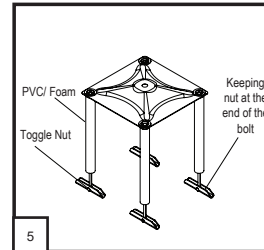
5. Wrap the bolt threads with foam and insert the PVC tubes over the foam. Screw toggles to the end of the bolts. Ensure the threaded rod is equal with the toggle bolt by making six 360° turns with the toggle.



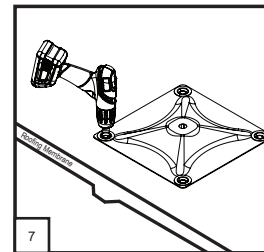
7. When plate is flat on roofing membrane, pull up the bolts and shake to release the toggles underneath the roofing. Once all bolts are protruding, screw them tightly to the plate with a drill.



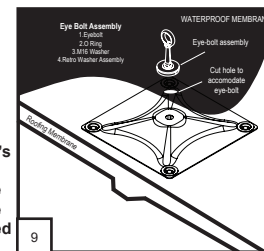
4. Cut the foam and the PVC tube to suit the thickness of the roofing material.



6. Place the toggles into the holes and push down to lay flat on the membrane.



8. Then, tighten the bolts with a ratchet.



9. Place the water proofing membrane over the plate and cut a hole to accommodate the eye-bolt assembly. Seal as per waterproofing manufacturer's instructions. The washer has a sticker back that needs to be peeled off before it is stuck to the membrane. Fasten the eye-bolt to the anchor. It is recommended to use Loctite when installing the eye-bolt. Tighten the eye-bolt, to prevent deformation.

INSPECTION

- Safewaze Anchors shall be inspected prior to each use by the user and at least annually by a Competent Person other than the user.
- Competent Person inspections must be recorded in the Inspection Log included in this manual and on the inspection grid label on the anchor.
- Severity of conditions during use of the anchor may necessitate increased frequency of documented inspections.
- Prior to each use, inspect the anchor for deficiencies or damage including, but not limited to, sharp edges, rough edges, deformations, corrosion, pits, burrs, chemical exposure, extreme heat exposure, and damaged, missing, or illegible labels.
- If any deficiencies or defects are found, the anchor must IMMEDIATELY be removed from service.

MAINTENANCE

- The anchor can be cleaned with water and mild soap if necessary. The user should remove all dirt, possible corrosives, and contaminants from the anchor prior to, and after, each use. Never use any type of corrosive substance to clean the anchor.
- Excess water should be blown out with compressed air. Hardware can be wiped off with a clean, dry cloth. Do not store anchor if wet or damp. Allow anchor to fully dry before being stored.
- Prior to installation, store the anchor in a cool, dry area where it will not be exposed to extreme light, extreme heat, excessive moisture, or possibly corrosive chemicals or materials.

WARNINGS

- Users should consult with their doctor to verify ability to safely absorb the forces of a fall arrest event. Fitness level, age, and other health conditions can greatly affect an individuals ability to withstand fall arrest forces. Women who are pregnant and individuals considered minors must not use any Safewaze equipment.
- Anchors that are exposed to fall arrest forces must be IMMEDIATELY removed from service and destroyed.
- A preplanned rescue procedure in the event of a fall is required. The rescue plan must be specific to the project. The rescue plan must allow for employees to rescue themselves or be promptly rescued by alternative means.
- A Competent Person must conduct an analysis of the workplace and anticipate where workers will be conducting their duties, the route they will take to reach their work, and the existing and potential fall hazards they may be exposed to. The Competent Person must choose the fall protection equipment to be utilized.
- Equipment designated for fall protection must never be used to lift, hang, support, or hoist tools or equipment unless specifically certified for such use.

LABELS

Membrane Roof Anchor
PART#: 022-4090

SAFEWAZE
225 Wilshire Ave SW
Concord, NC 28026
USA
(800) 230-0310
www.safewaze.com

MUST BE INSPECTED BEFORE EACH USE. MUST BE INSPECTED BY A COMPETENT PERSON AT LEAST ANNUALLY FROM THE DATE. ANY UNIT THAT HAS BEEN SUBJECTED TO FALL ARREST FORCES MUST BE REMOVED FROM SERVICE. MINIMUM BREAKING STRENGTH (MBS): 3,000 lbs. 134N

DO NOT REMOVE THIS LABEL

Capacity: 130-310 lbs. (59-141 kg) including clothing, tools, etc.

Materials: Stainless Steel, Steel Toggle

Meets: OSHA 1926.502, 1910.140, 1910.66

INSPECTION LOG			
MONTH	YEAR	MONTH	YEAR

310-0005

- WARNING** THIS EQUIPMENT IS DESIGNED FOR USE AS A FALL PROTECTION ANCHOR. USER MUST READ AND FOLLOW INSTRUCTIONS SUPPLIED WITH THIS PRODUCT AT TIME OF SHIPMENT. FAILURE TO DO SO MAY RESULT IN SERIOUS INJURY OR DEATH. AVOID CONTACT WITH HAZARDOUS MATERIALS INCLUDING BUT NOT LIMITED TO HEAT, CHEMICALS, ELECTRICITY AND SHARP OR ABRASIVE EDGES AND SURFACES. MAKE ONLY COMPATIBLE CONNECTIONS. REFER TO INSTRUCTIONS FOR APPROPRIATE INSTALLATION AND CONNECTION METHODS.
- Installation Instructions:**
- 1) Mark roof using plate mounting holes as template.
 - 2) Drill 4x holes (1 3/16 in Ø) through entire roof sheathing. Clean away debris.
 - 3) Install 4x toggle bolts through holes in plate.
 - 4) Cut the foam and PVC tube to suit the thickness of the roofing material.
 - 5) Wrap bolt thread with foam and insert PVC tube over foam. Screw toggle to the end of the bolt.
 - 6) Place toggles into holes and push down to lay flat on membrane.
 - 7) When plate is flat on roofing membrane, pull up bolts shake to release toggle underneath roofing. Once all bolts are protruding screw tight to plate with drill.
 - 8) Then tighten with ratchet.
 - 9) Place water proofing membrane over plate, cut hole to accommodate eye-bolt assembly, and seal as per waterproofing manufacturer's instructions. Fasten eye-bolt to anchor.

INSPECTION LOG



Inspection Date:	Inspector:	Pass/Fail:	Comments/ Corrective Action:
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