SAFEWAZE

FS-EX310-1 Ring Anchor Manual

APPLICABLE SAFETY STANDARDS

When used according to instructions, Safewaze Anchors meet **ANSI Z359.18-2017 Type A** and **OSHA 1910.140, 1926.502** 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).

The anchor connector has been tested in compliance with requirements of **ANSI/ASSE Z359.7**. The testing does not extend to the substrate to which the anchorage connector is attached.

⚠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 FS-EX310-1 ring anchor and all equipment used in conjunction with the FS-EX310-1. 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:

- Questions regarding the use, care, or suitability of this equipment for your application? Contact Safewaze.
- 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.

INTRODUCTION

Thank you for purchasing a Safewaze Anchorage Connector. 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.

SPECIFICATIONS

- Capacity: The FS-EX310-1 Ring Anchor is designed to provide a fall protection anchorage for a single user with maximum weight of 420 lbs.
- The anchor is reusable.
- Three 5/16 in. x 3 in. Hex Lag Screws are included with the anchor.
- Length of anchor is 9''.
- Minimum Breaking Strength is 5,000 lbs. (22kN).
- Minimum Service Temperature is -35°F (-37°C).
- 5,000 lbs. anchor point when used for Horizontal Lifeline (HLL) applications/single point anchorage applications limited to a 30° work angle.
- 3,600 lbs. anchor point when used as a single point anchorage with 360° work operations.

USER INFORMATION

Date of First Use: _____ Trainer: _____

Serial Number: _____ User: _____

WORKER CLASSIFICATIONS

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

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 or Competent Person to supervise the jobsite and ensure safety regulations are complied with.

LIMITATIONS

Never exceed a free fall distance of 6 ft. A free fall of more than 6 ft. could cause excessive arrest forces that could result in serious injury or death.

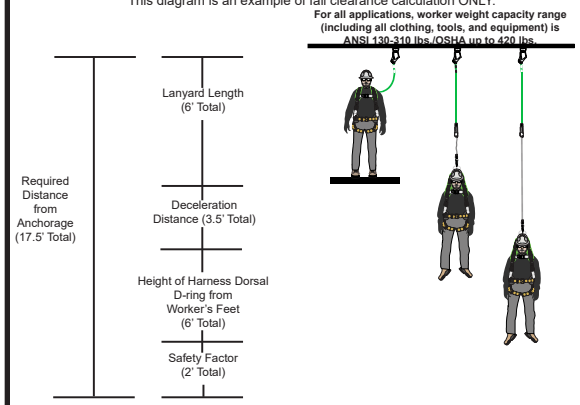
Safewaze Anchors have a maximum capacity of ANSI 310 lbs./OSHA 420 lbs. including any tools, clothing, accessories, etc., unless otherwise rated by Safewaze.

Structures for attachment of Safewaze Anchors shall support a minimum 5,000 lbs. (22 kN) or be designed with a safety factor of two 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).

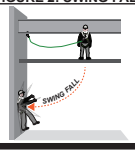
FIGURE 1: FALL CLEARANCE DIAGRAM

*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



SPECIFIC ANCHOR APPLICATIONS

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. (22kN). Maximum allowable free fall is 6 ft. The allowable attachment point to the harness is the Dorsal D-ring.

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 D-ring, Front/Sternal D-ring, Side D-rings, 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 D-ring, Front/Sternal D-ring, and Shoulder D-rings.

ANCHORAGE INSTALLATION LOCATION

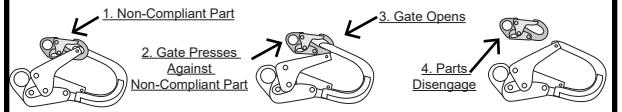
A Qualified Person or Engineer must conduct an analysis of the workplace and anticipate where workers will be performing their duties. An anchorage location selected for a PFAS must have a strength capable of sustaining a static load applied in the direction permitted by the PFAS of at least:

- Two times the maximum arrest force permitted when certification exists, or
- 5,000 lbs. (22kN) in the absence of certification.

COMPATIBILITY OF COMPONENTS/CONNECTORS

- Unless otherwise noted, Safewaze equipment is designed for, and tested with, associated Safewaze components or systems. Substitutions or replacements made with competitor's components or subsystems may jeopardize compatibility of equipment, possibly affecting the safety and reliability of the overall 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 ANSI Z359 and 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.

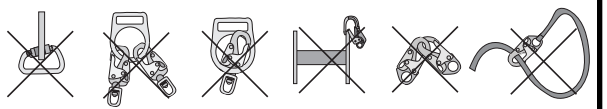
MAKING CONNECTIONS

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.

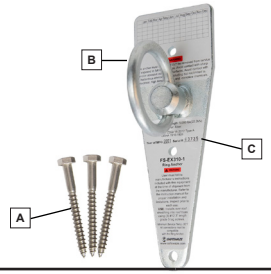
FIGURE 4: INAPPROPRIATE CONNECTIONS



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.

Address: 225 Wilshire Ave SW, Concord, NC 28025 | Phone: 800-230-0319 | Fax: 704-262-9051 | Email: info@safewaze.com | Website: safewaze.com

FIGURE 5: ANCHOR COMPONENTS



	Anchor Components	Materials
A	5/16 in. x 3 in. Hex Lag Screws (3)	Stainless Steel
B	O-ring	Zinc Plated Steel
C	Anchor Plate	Zinc Plated Steel

INSTALLATION PLANNING

The FS-EX310-1 Ring Anchor is designed to provide a fall protection anchorage for a single user.

It is designed for installation into wood roof material. The work location should be free of debris and other materials or equipment that could interfere with the proper operation of this equipment.

Inspect the substrate to which the anchor will be attached. User should inspect the intended installation location for hazards that include, but are not limited to, wood rot, severe weathering, multiple layers of previously applied roofing material, electrical hazards, etc.

Installation of the anchor is permitted over sheathing materials such as underlayment/ roofing felt and shingles, provided the qualified engineer or Competent Person has determined it is safe to do so and still maintains the proper safety factor.

INSTALLATION

1. To install the FS-EX310-1 Ring Anchor, place the anchor on the truss with its flat end pointed down. The anchor should be installed as close to the ridge as possible. Utilize the (3) 5/16 in. x 3 in. Hex Lag Screws included. **ALL** screws and screw holes must be used. All fasteners must be fully embedded into substrate to which they are attached. Minimum substrate thickness must be 7/16 in. or greater, with fasteners attached through the roof substrate, with embedment into truss (Figure 6).

2. The FS-EX310-1 can be reused and reinstalled. Fasteners can be reused if the pilot holes are drilled prior to fastener installation. Pilot holes should be 7/32 in.

3. Prior to initial installation or subsequent removal and reinstallation, the user must ensure that the FS-EX310-1 has no visible damage or defects. If removing and reinstalling the FS-EX310-1, the user must ensure that no damage or warping has occurred due to prior installation or removal. If any damage or defects are found the user must IMMEDIATELY remove the anchor from service.

4. Once properly installed, the user may attach a complete and compatible Personal Fall Arrest System to the O-Ring connection point on the FS-EX310-1.

FIGURE 6: INSTALLATION ILLUSTRATION

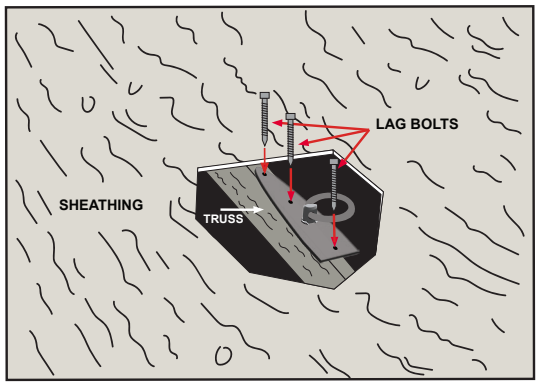


FIGURE 7: APPROPRIATE USE

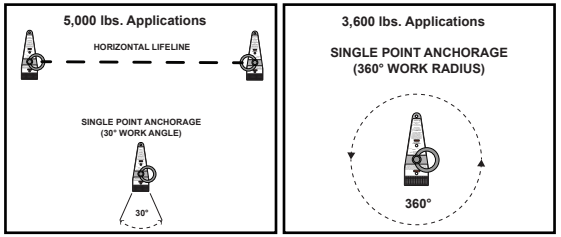
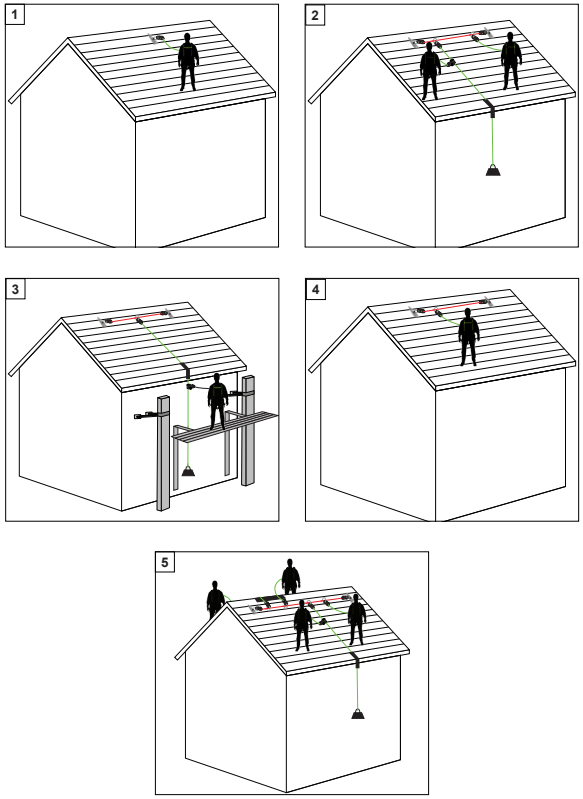


FIGURE 8: APPROPRIATE USE EXAMPLES

The FS-EX310-1 **is suitable** for us in HLL applications. For HLL systems with a capacity of up to 2 users, both users may work on the same side of the roof peak. For HLL systems with a capacity of up to 4 users, ensure that only 2 users are on each side of the roof peak. See Figure 8 (1-5) for examples of the anchor used in conjuction with HLL systems.



INSPECTION

- Safewaze Anchors shall be inspected prior to each use by the user.
- The anchor must be inspected 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 anchor may necessitate increased frequency of documented inspections.
- Anchors that fail inspection MUST be removed from service.
- 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.

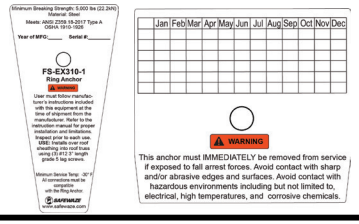
MAINTENANCE / WARRANTY

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.

When not in use, store the anchor in a cool, dry area where it will not be exposed to extreme light, extreme heat, excessive moisture, or corrosive chemicals/materials.

Safewaze warrants its products are free from defects in materials and construction under normal use and service. Liability is not accepted for abuse, modification, improper use, destructive activity and contaminated exposure.

LABELS



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.
- Failure to follow these instructions and warnings could result in serious injury or death in the event of a fall.
- 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 to be promptly rescued by alternative means.
- Harnesses or connectors selected for use with any Safewaze anchor must be compatible in size and configuration. User must ensure compatibility of snap hooks, carabiners, and other connectors. Any connection which could allow disengagement must be eliminated. Snap hooks and carabiners must be self-locking and self-closing and must never be hooked to each other.
- 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.

INSPECTION LOG

SAFEWAZE **INSPECTION LOG**
ANNUAL FORM

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

Website: safewaze.com
Fax: 704-262-9051 | Email: info@safewaze.com
Address: 225 Wilshire Ave SW, Concord, NC 28025 | Phone: 800-230-0319