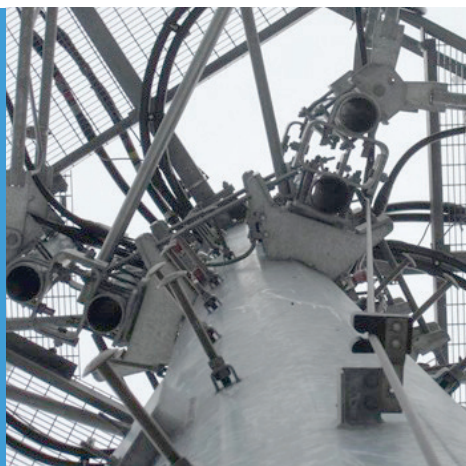


Planning Advisory Notice

The Safety Climb System

Although the safety climb system is one of the most important tools utilized by the climbing professional, it is often ignored and treated as merely an ornament. Safety climbs are too often rendered ineffective by being pinched behind mounts, stretched to the tension of a guitar string and pushed aside to allow the placement of equipment.

What could we have done better? We could have worked with the owner to adjust the mount allowing the safety climb to pass through and install anchors to allow for 100% connection 100% of the time.



As an industry, we have worked hard to assist the owners in understanding the importance of providing safety climb systems. The industry has worked hard to demonstrate that the safety climb allows the climbing professional to work safely and efficiently. Safety climb systems allow us to access our work

area more efficiently, improving the use of capital for the tower professional. One of the greatest things that we as an industry have done is to help the owners understand that if they worked with us to improve safe access, it would be easier for us to give them a quality install at the top of the tower. It is really quite simple - if a tower professional is able to access the required elevation safely and efficiently, it is more likely the tower professional is going to be in the proper mindset to perform quality work.

TIA established a standard size for a safety cable so that it is possible for anyone to be prepared to safely, efficiently, and with peace of mind, access a work area on a tower. Work quality and safety became a concern with the increase in collocation activity. Everyone has a schedule to keep; however, this schedule should never be used as a reason to cause damage to the safety climb system.

As contractors, it is important to understand that tower owners maintain the safety climb as a part of the structure and they are required to maintain it in accordance with TIA standards. Contractors are required by OSHA to have a fall protection plan when performing any work at elevation. By understanding

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the Scope of Work (SOW) and the type of structure on which the task is to be performed, the contractor may choose to use the safety climb cable as part of their fall protection plan. When the safety climb is included in the fall protection plan, it becomes part of the Personal Protective Equipment (PPE) for the site. In accordance with OSHA requirements, it is to be inspected prior to each use. Currently there is little guidance from the manufacturers on how to perform an inspection on this system. As of this writing, we are pleased to advise that several of the manufacturers of these systems have released, or are close to releasing, specific guidance for the inspection of these systems by a competent person. While we applaud these efforts, waiting for the various manufacturers is not sufficient. Across the industry, we must inspect the safety climb prior to each use if it is going to be considered part of a fall protection system.

What can we do?

1. First and foremost, cause no harm. This is the most critical issue we have with these systems. We are often inadvertently creating a hazard by installing appurtenances, lines, ground wires, and other equipment in locations that block or damage the safety climbs. In the attached pictures, take notice as to how the safety climbs were affected in ways that cause harm to the system. The contractor is responsible for:

- a. Avoiding creating an interference or hazard; and
- b. Immediately informing their client of a conflict between the SOW and the safety climb integrity so that other options may be considered.



The proper hardware should be used at all times.

What are some alternatives we may consider?

- a. Adjust the mount so the safety climb can pass uninterrupted. There are times that we have an obstructed climbing path due to the requirements of the installed systems. Special analysis is required for these types of installations to ensure this does not happen in a manner that negatively affects the safety climb. Provisions should be made in accordance with TIA 222 to allow a competent climber to safely navigate around the obstruction while maintaining 100% connection, 100% of the time.

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Here the system relied on for 911 and other critical communication is affected along with the performance of the safety climb system.

b. The safety climb may have a designed break in the safety climb path to allow the system to work properly.

c. We must be prepared to stop work and request a new assessment when we discover an interference issue with the safety climb. We cannot at any time cause harm to the integrity of the safety climb system.

NOTE: Contractors often sign agreements stating that if they cause harm to this system they may well be liable for what occurs.

2. Prior to the use of any PPE, it is to be inspected and users must be trained in its proper use. What can we do at this time to inspect? Note that due to different designs and site configurations this inspection must take place under the supervision of a competent person. As such, the following criterion may be considered:

- a. Visual inspection – Upon arrival at the site the SOW should be reviewed and a fall protection plan completed based on the type of structure. (some of this should occur prior to mobilization to the site)
 - i. Inspect the cable for signs of wear.
 - ii. Inspect that keepers are installed.
 - iii. Ensure that the cable is not breaking over any appurtenances, lines, lights, mounts or structural members.
 - iv. Observe the top assembly to verify that it is properly attached in accordance with the manufacturer' specifications.
 - v. Ensure that the bottom assembly is properly installed.
 - vi. Verify that the proper tension is on the system to facilitate its use.
- b. Load test – This is to be applied to systems where the manufacturers have allowed for this type of test.
 - i. Perform the visual inspection prior to this test.
 - ii. Install a grip on the cable that will not damage the cable.
 - iii. Insert a load cell.
 - iv. Using a block at the base, route a cable to the load cell.
 - v. Using a pulling device, apply tension to the system.
 1. Note - the loading should happen with care to avoid damage.
 2. Continuously observe the system as it takes the load.
 3. Paying attention to the alignment of the keepers and the top assembly is critical.
 - vi. Apply tension to the system in accordance with the manufacturer's recommendations.

- vii. Take care to ensure that the system is observed as tension is being applied.
 - 1. Ensure that the cable guides are not being adversely affected.
 - 2. Ensure that the cable is not being re-aligned.
 - 3. Observe any areas of concern.
- viii. After the load is applied, document the inspection.
- ix. Take care that the test is done safely while avoiding any falling debris.

What do we do when there are issues discovered during the inspection?

- I. If there is an issue with the safety climb, it should not be considered as a part of the fall protection plan until the issue is corrected.
- II. If the issue cannot be immediately resolved, the safety climb shall not be used as a part of the fall protection plan. "Do Not Use" must be prominently posted on the safety climb and the tower owner must be informed immediately.

How do we do this?

- a. Lockout/tagout the safety climb.
- b. Take pictures of the issue.
- c. Clearly document the issue.
- d. Identify recommendations on what can be done to correct the issue.
- e. Notify the tower owner immediately. Failure to notify the owner of an observed hazard may be cause for suspension.

What is required for a safety climb? The following source documents provide the answer:

- A. TIA-222G – Note that all of Section 12 is suggested

to be used for training. However, for this discussion we will focus on 12.3.

"12.3 Unless otherwise required, antenna supporting structures exceeding 10 ft [3 m] in height and antennas intended for climbing shall be equipped with a minimum of one climbing facility equipped with a safety climb device.



This is a very dangerous situation as this will not work to protect the people using this system.

To ensure compatibility with a climber's safety sleeve, the cable support system of a safety climb device shall have a stamped or engraved metal identification tag affixed at the base of the structure indicating the size and type of cable.

For cable support systems, a 3/8 in. [10 mm] diameter cable shall be considered as standard in order to minimize safety sleeve size requirements.

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Safety climb mounted on inside of the tower and then routed to the outside? Why? This is contrary to the install instructions.

Notes:

1. When a safety climb device is not continuous over the entire height, climber attachment anchorages shall be available at a maximum spacing of 4 ft [1.2 m] over the height not equipped with a safety climb device.
2. A safety climb device is not required for each climbing facility when multiple climbing facilities are provided. The

safety climb device shall be provided for the climbing facility that is continuous over the height of the structure.

3. Ladder cages and hoops are not recommended for communications structures due to the need to service the structure at various locations. If provided, a separate safety climb device is not required.
4. Climbing and safety climb devices need not be installed over the entire height of a structure when their installation would adversely affect the performance of an antenna. In such case, the structure shall be equipped with a warning sign or climber attachment anchorages shall be provided in accordance with the requirements of Note 1.
5. Structures not designed for nor equipped with a climbing facility over their entire height (i.e. structures not intended to be climbed that are maintained by other access means) need not have warning signs."

The cable should have been routed through the mount. While a climbing path obstruction, it should not be affecting the performance of the safety climb system.





The system must not be set up for failure.

A shortcut can cost someone everything.

This is only one small section of the TIA 222-G standard and it is important to view the standard as a whole. With that said, we have a number of tower owners that desire their new towers to be compliant with this standard. However, many times and due to a lack of understanding by project management, contractors, or the engineers, this does not occur. The simple thing for us to do is to share this information with tower owners.

In addition, we must all endeavor to train our people to understand that it is critical for us to understand these requirements and to insure that they are followed.

We are all accountable to each other. Everyone in the industry must stand together to ensure safe operations.

B. ANSI A14.3-1992 section 7.0 – In brief: The anchor points of cable-type safety climb devices shall be designed for a nominal vertical load of 2,700 lbs [12 kN].

C. OSHA – Does OSHA require a safety climb? No. What OSHA requires are the tools, training and competency for workers to safely access their work site. However, when we choose to use a safety climb as part of our fall protection for our employees, it then becomes PPE and it is then our responsibility to inspect it with each use as we would any other PPE. While the contractor owns the sliders, we do not, in most cases, own the cable. PPE users are in control when we decide to use the safety climb system provided.

D. In the event of an issue with the safety climb cable, the contractor should inform and clearly communicate the issue to the owner. ■

