



What is the Wire Rope Safety Climb for Antenna Supporting Structures

Up until the creation of the SEMC (Safety Equipment Manufacturers Committee) consensus document, there was no consistent guidance in regard to wire rope safety climb/systems. Manufacturers and industry stakeholders developed this guide over the course of several years based on their expertise, work experience, best practices and existing ANSI standards. The SEMC document attempts to clarify and define the applicable terminology. It also clarifies the maintenance and condition assessment criteria so that manufacturers, purchasers, engineers and technicians may be better able to understand and communicate in a consistent and professional manner.

The SEMC intends to continue its work and may eventually produce an industry standard through either a standards body or another organization.

There is a definite need for establishing a consensus standard representing the best practices for the use, maintenance and condition assessment of safety climb systems. The Telecommunications Industry Association (TIA) is establishing a Foundation. The TIA Foundation's intent is to assist organizations such as the SEMC

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in developing standards or guides to communicate important issues to the industry. The telecommunications industry is a critical part of our society, which allows the important connections we all depend on. People rely on these services to enable texting, talking, sharing data, email, machine-to-machine communications, medical services, emergency services, smart cities and so much more. The men and women that work on these structures and services provide much more than what is often only referred to as 'tower work'. In fact, they are critical to supporting a key aspect to our modern society. Telecommunication technicians engaged in this work are responsible for direct deployment, maintenance and enhancement of these services, and without their efforts, the connections we depend on would not be possible. Therefore their safety is of critical importance and is the primary reason the manufacturers of safety equipment were willing to come together to address safety climb questions and concerns that were voiced by TIRAP and others in the industry.

The first SEMC meeting was hosted by SBA Communications with several members represented from the TIRAP board, OSHA (note that as a consensus document, OSHA can participate but cannot vote or advocate for the document), NATE, TIA, and WIA. This document however would not have been possible without the engagement and efforts of the participating manufacturers:

- TUF-TUG Products, Deuer Developments
- Trylon
- 3M
- Allfasteners
- MSA
- GlenMartin
- Various Industry Stakeholders

With commitment from the manufacturers, it became apparent that the industry needed to provide their support to enable the working group to establish their goals. The goals needed to ensure that safety climbs were going to be an effective option for workers under the supervision of the competent person when creating fall protection plans based on the site-specific SOW (Scope of Work).

It was astounding to see this diverse group come together as competing organizations and industry stakeholders with their primary focus on the safety of those working in the industry. The team quickly established consistency through open and honest conversa-

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tions about the issues and concerns both this group as well as the industry had. The current issues and critical concerns were vetted and prioritized as follows:

1. Common vocabulary of terms including definitions
2. Loading information
3. Inspection requirements
4. Post fall arrest PPE inspection

Although the definition of industry terms seemed rather simple at first glance, the group quickly learned nothing could be further from the truth. The important definition of the safety climb system itself was debated, with the group settling on Wire Rope Safety Climb (WRSC). The use of WRSC, along with the other defined terms in the SEMC consensus document, was the result of examining terms used within various codes and standards particularly the "Structural Standard for Antenna Supporting Structures and Antennas" commonly referred to as ANSI/TIA-222. It was clear that the intent of Rev G of this standard was to consider a 3/8-inch diameter cable as the standard for a safety cable support system. Due to other uses for the word cable it was determined by the SMEC members that the word 'cable' should be replaced with words 'wire rope' to minimize safety sleeve size requirements.

This information was relayed to TIA and in the current revision of the ANSI/TIA-222-H (Rev. H) Standard with a 3/8-inch wire rope specified as the standard. This is really a crucial point with one term being agreed to by these manufacturers that our industry was seeking to add clarity to others using the terms, so all can begin to communicate, train, inspect, design, and maintain these wire rope safety climbs using the same terminology. In addition, clarifying notes regarding the requirements for safety climb systems were added to Rev H. Another critical term that was decided upon was, what is the slider, cable grab, safety climb trolley, sleeve or whatever they are referring to it today, going to be called? As a group there were discussions and again, the manufacturers arrived at a consensus that this critical device was to be called a "Wire Rope Safety Sleeve". Again, this was to allow all the manufactures to communicate about components well and focus on how to support education, use, awareness and competency in the industry for the use of WRSC's.

One of the most critical discussions revolved around inspections. It was disheartening to see so many pictures of WRSC's improperly installed, being damaged by other appurtenances installed, being modified from the manufacturer's design, and many other issues. The group concluded there would be no way to address this with just one inspection requirement. They elected



to segregate the inspections into two distinct types of inspections.

1. Inspection as an appurtenance
2. Inspection as PPE

Why was this decision made? It is vitally important to stress the purpose of the WRSC. It is just another appurtenance (like a mount) until a competent person elects to use the WRSC as PPE as part of a fall protection plan created in compliance with the requirements of ANSI/ASSE A10.48. By looking at the issues and understanding some of the concerns in the industry, it seemed important that we as an industry need to do a better job of communicating the need for more effective training on the importance of the competent person(s) to properly install, maintain and inspect these WRSC's. The group reviewed a tremendous amount of data and determined that most of the issues with the WRSC's had nothing to do with maintenance. It was due to improper installation, non-compliant modification of a manufacturer's WRSC and installations of other appurtenances that damaged the WRSC as it existed on the structure. The group was also concerned that there was an assumption that if a tower was inspected as part of a maintenance and condition assessment, that meant that the safety climb was acceptable to be used by the next contractor to arrive on site. This is simply not the case as so many of us know lightning,

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vandalism, sunflower effect, and other issues have been documented to cause issues with these WRSC installs. It was important for the WRSC to be inspected when the tower is inspected as part of the normally planned maintenance and condition assessment per ANSI/TIA 222 in harmony with the plan the owner has for maintenance of their sites.

The inspection as an appurtenance on the tower is different from the inspection required when the safety climb is considered for use as part of the fall protection plan. It is critical that the WRSC be inspected prior to use as with any item that is to be utilized with PPE by the competent person. When the WRSC is intended to be used as part of a fall protection plan the group established some base line inspection criteria to aid the competent person. This was ground breaking for our industry. The industry's structure owners had inspection guidelines for when they performed their normal planned tower maintenance and condition assessments. Now contractors who elect to use the WRSC have guidance for the foundational inspection of a WRSC when it has elected to be used as a flexible carrier to connect to the employee's PPE. This was not all the SEMC also gave guidance on how to deal an appurtenance/mount that has affected the WRSC. As we know from the standards, climbing facilities may be obstructed when necessary. However, it was never intended or allowed to cause harm to the structure, appurtenance or through the installation of any other item on the tower, such as a mount. The group clearly communicated that when such an issue occurs, it is never acceptable or allowed to cause harm to the WRSC. The WRSC, can be split at this point, routed around the obstruction, or even have a situation with a "Confined Safety Climb". So, the manufacturers defined when the wire rope can be obstructed in the document and stressed that when this occurs the competent person must use alternate means of fall protection. This will also help contractors that observe issues with a WRSC installation. The contractor will be able to point to the appropriate inspection criteria presented in the document and effectively communicate to the owner what maintenance issues were observed and recommend how to address the issues identified. It will also help ensure that the initial installations are installed properly, and that the installation of other appurtenances will not cause harm to the WRSC.

The group also addressed the loading of the WRSC. This is a prominent issue. It allows manufacturers of WRSC to convey the intended loading in an agreed upon language. It is important to note that ANSI/TIA-222-H establishes a minimum design requirement for the top anchorage of a safety climb system. This information can help the contractors create their fall protection plans and can assist when modifications are



required or when the owner may choose to increase the number of climbers that the safety climb top anchorage must support.

The group also provided some guidance for rescue after a fall arrest event occurs causing the existing WRSC to be engaged. It must be noted that the SEMC guidance on this matter is not intended to replace a fall protection plan and its rescue plan. It is intended to recognize that there are cases in which the best available path to complete the rescue will use the existing WRSC. If it is determined the WRSC is the best path, the items addressed in the SEMC consensus document outlines the minimum requirements that are required to properly define a fall protection and rescue plan.

The group does not intend to rest with having accomplished all that they have done, but at this time are engaged in the next steps. The next issue they intend to communicate is the compatibility of the wire rope safety sleeves from the various manufacturers. They are also making plans to test installed systems based upon existing standards and extrapolating the results to address some of the unique issues that face our industry such as the use of a WRSC when the climbing path is inclined. Stay tuned to NATE and the TIA Foundation for future updates on the earnest efforts of this group.

