

## Certified vs. Non-certified Anchorages

I'm rolling my eyes, reluctantly writing this article, because the topic of anchorage strengths and all the terms; certified, non-certified, temporary, permanent, engineered, non-engineered, selected, proven, approved, compliant, ordained by the church, or another descriptive term has been a point of discussion and arguments for as long as I can remember. Nonetheless, it's a topic that comes up frequently, so I will do my best to bring light to the subject. The root of the issue isn't the term used to describe anchorages, but how does a person determine an anchorage meets the legal strength requirements.

All jurisdictions state and require an anchorage strength. There are usually two choices: 5000 lb. or two times the arresting force of the system. The dilemma that presents itself is, how does the end-user, or anyone else for that matter, know how strong the anchor is to ensure performance and compliance. For the purposes of this discussion, the numbers (strength of anchor) are irrelevant.

***Anchor Rule #1: There are only two ways to prove the strength of an anchorage; engineering analysis or physical testing.***

This isn't just a fall protection rule, the only two ways to prove the strength of anything is through engineering or testing. Engineering analysis or physical testing are the only two methods to accurately prove the strength of structure used for anchorages. Two people eyeballing the building column thinking it may be strong enough isn't proof. It might be a great estimate and meet the strength requirements, but it's not proof. It may even be ten times the amount needed, but it's still an estimate. Neither person can provide a number as to how much strength is left after the steel is done doing its job of holding up the building. Add a couple of feet of snow on the roof of that building with some wind and the remaining capacity is less. Connecting to a tower leg, knowing it's the strongest part of the structure is good judgment, but it certainly doesn't provide a number for the strength of the tower leg. The only two ways to prove the strength of the structure are by engineering analysis or physical testing. So, the only "certified" anchorages are those that have been vetted by engineering analysis or physical testing; usually supported by some level of documentation, specific to the application, proving its specific strength (calc's, test reports, etc.). For me, I'm not as concerned with the terms used, certified, proven, engineered, qualified, blessed, approved, and permanent are all terms used to describe the same thing; the anchorage has been proven by engineering or testing practices.



The challenges with proving anchorages are typical. Issues with ownership of the structure, greater hazards, destructive testing, frequency of use, duration of the task, and time come into the discussion. Everyone agrees that proving anchorages is best practice and preferred, however, there are several instances where proving anchorage strength isn't possible.

***Anchor Rule #2: Unproven anchors are not illegal, just higher risk.***

OSHA, as well as most other jurisdictions, recognize these challenges and allow people to estimate and judge the strength of an anchorage without engineering or testing. OSHA calls these anchorages "make-shift". Go to Appendix C of Subpart M (<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926SubpartMAppC>) and do a word search for make-shift. You will read;

*"...the Agency recognizes that there will be a need to devise an anchor point from existing structures. Examples of what might be appropriate anchor points are steel members or I-beams if an acceptable strap is available for the connection (do not use a lanyard with a snap hook clipped onto itself); large eye-bolts made of an appropriate grade steel; guardrails or railings if they have been designed for use as an anchor point; or masonry or wood members only if the attachment point is substantial and precautions have been taken to assure that bolts or other connectors will not pull*

*through. A qualified person should be used to evaluate the suitability of these "make shift" anchorages with a focus on proper strength"*

So, the option exists for people to use anchorages that have not been proven. Keep in mind using makeshift anchorages increases risk since the anchorage was qualified by an individual's judgment and not sound science. They still have to meet strength requirements, but the option to select the anchorage is there. There are valid arguments that all anchors should be proven. Looking back at Appendix C to Subpart M, the two paragraphs right above the make-shift anchorages language, OSHA states:

*"...one of the most important aspects of personal fall protection systems is fully planning the system before it is put into use. Probably the most overlooked component is planning for suitable anchorage points. Such planning should ideally be done before the structure or building is constructed so that anchorage points can be incorporated during construction for use later for window cleaning or other building maintenance. If properly planned, these anchorage points may be used during construction, as well as afterward. Properly planned anchorages should be used if they are available. In some cases, anchorages must be installed immediately prior to use. In such cases, a registered professional engineer with experience in designing fall protection systems, or another qualified person with appropriate education and experience should design an anchor point to be installed."*

It's pretty clear to see what OSHA's intent is when it comes to anchorages. Identify and prove the anchorages as part of the planning process using a registered professional engineer. If proving the anchorages isn't possible, use make-shift anchorages with a focus on proper strength.

Nobody will argue the benefits of proven anchorages. They remove errors in judgment, ensure compliance, and are in the right location (usually) for the work. Many organizations have made a commitment to prove all anchorages. Unfortunately, proven anchorages take time, cost more, and are not usually possible for on-demand work. There are a number of situations where proving the anchorage isn't feasible. A greater hazard argument is sometimes valid, employers don't have ownership or influence over the structure to make modifications, there's a chance structure is damaged during testing, and even the life expectancy of the structure can play a role.



WAH encourages Program Managers to address anchorages as part of the fall protection program. The fall protection program identifies fall hazard areas, and identifying acceptable anchorages can be part of that process. The fall protection program will identify repeatable, predictable, and routine work areas where proven anchorages are possible. The program can identify areas where pseudo-engineered anchorages (concrete drop-ins, roof fastened, etc.) are applicable. Program Managers can systematically plan for, budget, and install proven anchorages for locations where it makes sense. Just as important as identifying proven anchorages, the program can identify where unproven anchorages are applicable and provide guidance during training on how to select sound anchorages.

In time, it's possible that all anchorages will be proven. Regulations exist for rope descent system building anchorages to be proven and it's predictable that this trend will slowly become the norm. The safest position to be in, for both the worker at height and their employer, is to prove the strength, location, and compatibility of all anchorages in use. It'll just take some time to get there.

Go to [www.wahmember.com](http://www.wahmember.com) for fall protection resources, training, continuing education, and contact information.

Kevin Denis  
Work-at-Height  
[denis@wahmember.com](mailto:denis@wahmember.com)