

Update - Myths and Misconceptions in Fall Protection

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Introduction – Working within the system

Since the early 1970s, the Occupational and Health Act (OSHA) has had a great impact on the workplace. The Standards, 29 CFR 1910 and 29 CFR 1926 which are targeted to general Industry and Construction respectively, are not exactly user friendly and confusion about the interpretation of the standards has been a problem. Fall protection has not been immune to this confusion and many issues have been raised.

This presentation is focused only on Federal OSHA 29 CFR 1910 General Industry Standards, Subpart D - Walking-Working Surfaces and Subpart I – Personal Protective Equipment; and 29 CFR 1926 Construction Standards, Subpart M - Fall Protection and Subpart X – Stairways and Ladders, plus the OSHA tools for interpretations. This presentation does not cover residential construction, aerial lifts and other fall protection issues. Your regulations will probably be different than those presented if you are operating under a State plan.

Where do we find the answers? Fortunately we have several sources of clarification, but it takes a little digging. The easiest tool to use is the Letter of Interpretation. As of December 2006, OSHA has issued 366 Letters of Interpretation on fall protection. Each of the sources will be reviewed following this introduction.

The second source is proposed rulemaking. In 1973, OSHA Proposed revisions pertaining to fall protection in Subparts D & I of the General Industry Standard, 29 CFR 1910. After going out for comment, etc., the proposed revision was withdrawn in 1976 because some of the provisions were already outdated. In 1990 a new, revised proposal was put forth. The same 1990 proposal was proposed again in 2003. These changes have not become part of the standard, but as long as they are proposed, they are available for use!

The other relatively simple method of finding answers is to ask. The OSHA Compliance phone number is 800-321-OSHA. Depending on your question, you may not receive a direct answer. You are not talking to OSHA directly, but to a gatekeeper. If the gatekeeper cannot answer your question to your satisfaction, they will contact OSHA and get the answer for you. It has been my experience that when the gatekeeper calls you back, in addition to the answer, you will receive

the name and phone number of the OSHA Compliance Officer that provided the answer, but so far I have not been successful trying to reach that person.

Using the sources

First, Letters of Interpretation are the OSHA response to formally submitted questions asking for clarification. This is the system for Federal OSHA. If you are working with a State OSHA program, this presentation will give you general guidance, but not specifics. Find out from your State Regulatory Agency how their system works. Also, forget the myth that all state plans are as strict or stricter than Fed OSHA. Examples of this will be forthcoming as we discuss separate issues.

1. Go to the OSHA home page, <http://www.osha.gov>

March 22, 2006 Site Index: [A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)



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Text Search: <input type="text"/>	Date Search: <input type="text"/> <input type="text"/> <input type="text"/> to <input type="text"/> <input type="text"/> <input type="text"/>
<input type="button" value="Search"/> <input type="button" value="Clear"/>	

[Search Help](#)

Table of Contents

[Standard Number](#)

[Information Date](#)

3. The following page will appear. In the Sort by: box, click on Title and the Letters will be sorted in chronological order. This is very helpful when you visit the site again. At first the ask seems daunting, but after you become familiar with the site and go through several letters, you will begin to find it somewhat easier.

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Standard Interpretations Results

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Your search for **Fall Protection** has returned **356** documents.

Results 1 - 10
By Relevance

Top Links

- ★ [Fall Protection - Construction Regulations 1926 Subpart M](#)
- ★ [Fall Protection - Construction Safety and Health Outreach Program](#)
- ★ [Fall Protection - It's a Snap!, Employer Kit 2003](#)
- ★ [Fall Protection - Safety and Health Topics](#)
- ★ [Fall Protection in Construction - Publication 3146 1998](#)
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Result Page: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) ... 

1. [2004 - 04/20/2004 - Alternative fall protection for leading edge work during precast concrete erection.](#) 18k

Next, find the proposed rulemaking. On the OSHA Homepage, in the same right hand column, directly under Interpretations is the title “Federal Registers.”

1. Click on it and you will find a page similar to the second page shown above.
2. In this case, I typed in “proposed rulemaking 29 CFR 1910” and in the search date block enter “2003”
3. The first item shown was “2003 - 5/17/2003 – Walking/working Surfaces...”
4. Click on it and the whole thing pops up, beginning with the background. Scroll down and find the actual proposed legislation.

Some of the proposed changes for General Industry work are; the addition of portable ladders to the standard, expanded fall protection options including the designate area and fall restraint, expanded scaffold instructions, and some height leeway on parapets as fall protection.

The third avenue of clarification is calling OSHA Compliance directly. As I stated earlier, you will get a gatekeeper. The person can be very knowledgeable, but as a safety professional your inquiry will undoubtedly go beyond their knowledge and they will seek help from OSHA. Be as thorough as you can, giving specifics to help them get you the right interpretation. Remember, it will be repeated at least once and maybe several times. Your answer may be returned in days, or weeks. You can get lucky, but don't count on it. You will not receive written verification, don't ask. If you want something solid, submit a written letter asking for an interpretation, but you may wait a year or longer to get a response, which will be a Letter of Interpretation.

Another source is the next item below Federal Registers, called Directives. Not a lot of help for fall protection, but worth checking out and usable in other areas.

It may seem confusing and convoluted at first, but these are tools to help you do a better job. The information you receive can be acted upon with a high degree of confidence, become part of your Fall protection Plan, or a particular procedure.

Some Common Myths and Misconceptions

No. 1 - 29CFR1910 (General Industry) & 29CFR1926 (Construction) rules are Interchangeable is a MISCONCEPTION

This misconception is common. 29CFR1910 covers General Industry, including operations and maintenance. 29CFR1926 covers Construction, i.e. construction, alteration, modification, roofing and demolition.

Unless an interpretation letter allows the use of a 29CFR1926 control, you can't assume it is acceptable to use for, say maintenance which falls under 29CFR1910. For example, the basic General Industry standard¹ states *“Every open-sided floor or platform 4 feet above adjacent floor or ground level shall be guarded by a standard railing on all open sides except where there is entrance to a ramp, stairway or fixed ladder...”* That's it, a guardrail, nothing else is authorized in the Standard. However, in 1978, OSHA issued a compliance directive, which is still in effect, allowing the use of alternate fall protection, which would include the use of personal fall protection, where the use of guardrails is not feasible. Then in 1990, OSHA published a proposed CFR1910 rulemaking, (again reissued in May, 2003). It defines acceptable General Industry fall protection to include personal fall arrest systems (PFAS), work positioning systems, travel restricting systems (restraint), fixed ladder climbing systems, hole covers, safety nets and a new proposed “designated area” category. The gap between the two regulations is closing, but there are still differences. As we proceed through this presentation they will become evident.

Construction on the other hand allows a 6 foot height before fall protection is required. The rules are not the same for the different activities. The guardrail height as low as 30” can be modified to conform to the Proposed 1910 does not conform to the Construction standard². A 36” guardrail erected before 1973 is grandfathered in 1910, but the same guardrail must be modified for construction. Steel erection has different trigger heights as will be covered later.

No. 2 - Six-foot Rule is a MYTH

OSHA has never accepted the premise that distance alone is adequate fall protection. Where did the practice of remaining at least 6 feet away from the edge come from? In some instances it came from misinterpreting the standards, i.e. 29 CFR 1926 Subpart M, Appendix E, III Implementing a Fall Protection Plan, subheading Detailing. First, notice this is a Fall Protection Plan, in other words, construction leading edge work, complying with the Controlled Access requirements. Several specific activities are listed, “Employees engaged in these activities but who are more than six (6) feet from an unprotected edge as defined by the control zone lines, do not require fall protection but a warning line or control lines must be erected to remind employees they are approaching an area where fall protection is required.” The warning line part has been ignored. State requirements may cloud the issue. For example, Cal/OSHA does not require fall protection if you are more than 6 feet from an unprotected edge, no warning line required. An example of the State OSHA being much more liberal than Fed OSHA. Another source of confusion is some judges have ruled that 6 feet from the edge is adequate, even though the Federal Standards state differently. You get the picture and the list of excuses, or “rationales” seems almost inexhaustible.

In that case, what then is acceptable? Your first step is to determine if this is a General Industry or Construction activity. For General Industry the proposed “designated area”³ (Depicted in

¹ 29CFR1910.23(c)

² Appendix A, Proposed 29CFR1910.28(4)

³ April 1990, May 2003 Proposed 29CFR1910.28(d)

Exhibit 1) is similar to the 6-foot rule, but several conditions must be met. Employer compliance with a proposed rule, in lieu of compliance with an existing rule, is considered a “de minimus” violation⁴. De minimus conditions are violations of standards that, for whatever reason, do not at the time of inspection have an immediate relationship to safety and health and therefore are not included in a citation.

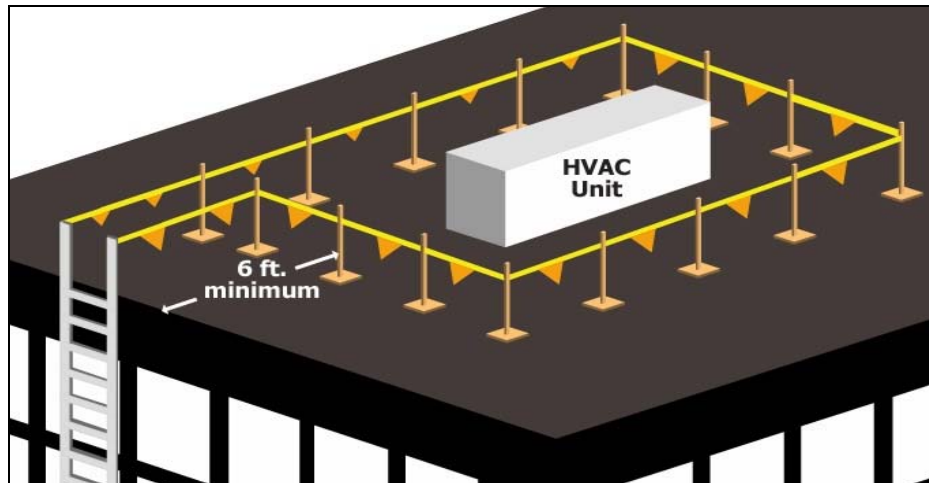


Exhibit 1. Designated Area

What is a General Industry “Designated Area”? Basically, this is a modified Construction Warning Line System⁵, but for General Industry use only:

- Slope of 10 degrees or less, 4:12, a low slope roof
- Complies with the provisions of 1910.28(d), (a 16# force non-conforming guardrail)
- PLUS (added):
 - Work must be of a temporary nature,
 - Erected as close to the work area as permitted by the task,
 - Perimeter no less than 6 feet from an unprotected edge,
 - Access to designated area by a clear path formed by 2 lines, same criteria for lines and stanchions as above.

The designated area was also cited in a Letter of interpretation dated February 27, 2006.

The third source, the calling OSHA directly also provided other interpretations. These three verbal interpretations apply to both 1910 and 1926. I was told that Compliance Offices have been instructed that these exceptions are to be treated as de minimis violations.

The first verbal interpretation, the “first-man (men) up” refers to the workers that are solely engaged in erecting fall protection systems or warning lines. If no fall protection is feasible, i.e. suitable anchors, or nothing overhead, the workers erecting the fall protection system are not required to be tied-off. This is similar to scaffold erectors and steel connectors, where at times, a lanyard or multiple lanyards become a greater hazard. Obviously all precautions should be

⁴ Interpretation letter, 12/18/1997 to D. S. Mihou)

⁵ 29CFR1926.502(f)(2)

maintained, fall protection should be used when possible and distance from the edge kept at a maximum.

The second verbal interpretation was that for a short term duration task, when the time and worker exposure of setting up temporary fall protection exceeds the task duration and hazard exposure, the employee(s) may proceed directly away from the unprotected edge to the point of their task, then apply a fall protection system, i.e. tie off with fall arrest, or fall restraint, before going to work and remain tied off until the work is completed. Then un-hook and walk straight toward the edge, keeping the unprotected edge in front of the worker(s) until reaching the access



point.

The third verbal interpretation was that a designated area may become semi-permanent, if the area requires repeated access, until a permanent fall protection system is installed.

OK, so now we know that General Industry has more choices, rather than just the guardrail as originally stipulated in the standards, but distance is still not one of them.

For Construction activities, distance may be used for fall protection. In the preamble to the 29CFR1926 Standard Subpart M, OSHA states the premise that “*OSHA has determined that there is no safe distance from an unprotected side or edge that would render fall protection unnecessary.*” That was the rule until July 1996, when in response to Dr. Nigel Ellis, a Standard Interpretation letter⁶ was written that concluded that “*However, when employees working 50 to 100 feet away from the unprotected edge have been properly trained, then the situation can be considered a “de minimus” condition.*” These are the basic premises and starting points in our determination of what is going to be required for fall protection. Obviously, a large roof surface is required to meet the basic criteria.

One other type of activity needs mentioning before we proceed. The Construction standard gives an exception⁷, “*The provisions of this subpart do not apply when employees are making an inspection, investigation, or assessment of workplace conditions prior to the actual start of Construction work or after all Construction work has been completed.*” This exception is not activity specific, but it states construction work specifically, therefore it is not applicable to maintenance or operation type activities in General Industry.

Before continuing on to a “non-conforming guardrail”, let me clarify what “fall protection systems” the Construction provisions do offer in 29CFR1926.502. I will only reference the commonly misunderstood applications:

⁶ Interpretation letter, 7/23/1996 to Dr. J. Nigel Ellis

⁷ 29CFR1926.500(a)(1)

- 1926.502(f) Warning line systems only apply to roofing work on low-slope roofs.
- 1926.502(g) Controlled access zones only apply to overhead bricklaying⁸ and related work.
- 1926.502(h) Safety monitoring system only applies to roofing work on low-slope roofs 50-foot wide or less, or combination systems, i.e. warning line system and safety monitoring system only for roofing work on low-sloped roofs⁹.
- 1926.502(k) Other Fall protection plans are only available for leading edge work, precast concrete Construction work, or residential Construction work.

As with the General Industry Standard, Standard Interpretation letters have allowed a modified Warning line system, similar to the General Industry “Designated Area” but with several differences. It is referred to as a “Non-conforming Guardrail.” (Depicted in exhibit 2). You may have heard it referred to as the 15-foot rule.

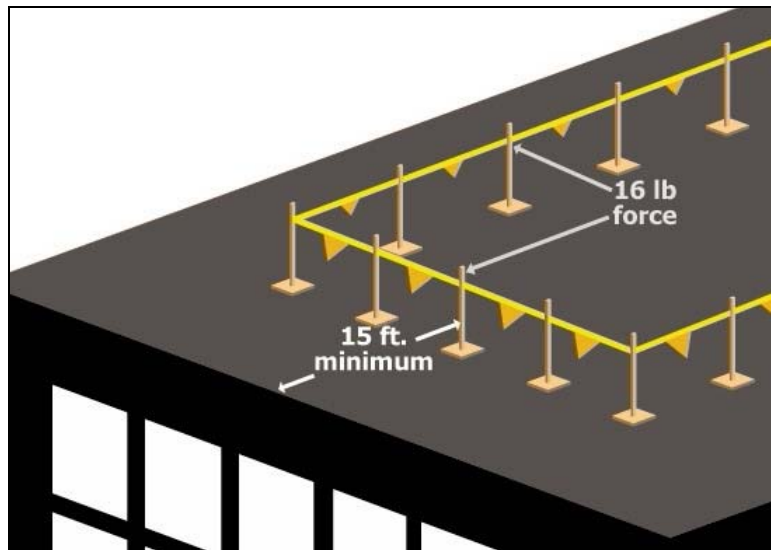


Exhibit 2. Non-conforming Guardrail

A “Non-conforming Guardrail”¹⁰, is a de minimus violation constructed according to the provisions below:¹¹,

- The warning line is used 15 feet (+) from the edge of the unprotected side or hole,
- The warning line meets the requirements of 29CFR1926.502(f)(2),
- No work allowed between the warning line and the edge,
- Employer effectively implements a work rule prohibiting going beyond the warning line.

⁸ 1926.501(b)(9)

⁹ 1926.501(b)(10)

¹⁰ Interpretation letter, 5/12/2000, Barry A. Cole; also 11/02, 12/03, 1/05

¹¹ 29CFR1926.502(f)(2)

Non-conforming guardrails are *similar* to the designated area but contain significant differences, such as 15 feet away, and an employer work rule prohibiting work past the line.

The three verbal interpretations; first-man-up and short term direct walk to the work also apply for construction.

No. 3 - Fall Restraint is NEITHER a myth or a misconception

This is not a myth or a misconception, even though restraint does not appear in the current Standards. Restraint may be the answer to many of your required fall protection situations. Fall restraint is using physical apparatus to prevent a fall. If you cannot fall, the hazard is eliminated and fall protection is not an issue. Do not confuse fall restraint with fall positioning. Fall restraint does not allow any fall distance, but fall positioning allows a fall distance not to exceed 2 feet.

Is fall restraint permissible according to OSHA instead of fall arrest in General Industry and/or Construction? The proposed 29CFR1910 changes to Sections D and I incorporate fall restraint¹² as Restraint line systems. When an employee is tethered, restraint line systems shall meet the applicable requirements of subpart I.¹³ Restraint lines shall be capable of sustaining a tensile load of at least 3,000 pounds.

Fall restraint is only mentioned in the proposed change of 29CFR1910, not in the current standard or mentioned anywhere in 29CFR1926. However, this is where the Standard Interpretations come in again. Construction has similar guidelines in 2 Standard Interpretations, both dated 11/95¹⁴, so the answer is yes, fall restraint may be used in both General Industry and Construction activities.

Do you need a full body harness? No, body belts are acceptable since you can't fall anyway¹⁵. ANSI Z359 further defines Fall Restraint as the technique of securing an authorized person to an anchorage using a lanyard short enough to prevent a person's center of gravity from reaching the fall hazard¹⁶.



¹² April 1990 Proposed 29CFR1910.28(g)

¹³ April 1990 Proposed 29CFR1910.128(c)(11)

¹⁴ Interpretation letters 11/2/1995, Mike Amen and Dennis Gilmore

¹⁵ Interpretation letter 3/27/1995, Bradley Nester

¹⁶ ANSI Z359.0.2.67

Are you restricted to a 6-foot lanyard? No, again the personal fall arrest system rules do not apply. You just have to make sure that your tether is short enough to prevent a fall in all directions from your anchor, not just the location where you are working. Can you use a standard lanyard with a shock absorber? Yes, both major equipment manufacturers have stated that the force of you falling down and even sliding, will not activate the shock absorber.

How much anchorage is required? General Industry requires a 3,000 pound anchor. Construction requires either 3,000 pounds or twice the potential load. Remember, you may not be on a flat surface.

No. 4 – Ladder usage gives rise to both MYTHS AND MISCONCEPTIONS

Fall protection on fixed ladders of certain heights is required. The perceived misconceptions come in when we mix 29CFR1910 and 29CFR1926.

- General Industry standards¹⁷ require a cage or well when fixed ladders are between 20 and 30 feet in length, however ladders on towers, water tanks and chimneys may use ladder safety devices¹⁸. (Different issue, but one that needs your consideration. Do you agree that a ladder cage is an adequate fall protection device? I don't expect a response, just think about it.)
- Now, if you look further and get to the meat of the issue, go to an Interpretation letter¹⁹, “...*The employer requiring the use of ladder safety devices in lieu of cage protection and landing platforms on structures other than towers, water tanks, and chimneys may be issued a de minimus notice in lieu of a citation. The policy of using a De Minimus Notice in lieu of a citation is based on OSHA Program Directive #200-36, Subject: De Minimus Notice and prior proposed OSHA standard that allowed ladder safety devices to be used on all fixed ladders in lieu of cage protection.*”
- Construction standards²⁰ simply state that fixed ladders shall be provided with cages, wells, ladder safety devices, or self-retracting lifelines where the length of climb is less than 24 feet but the top of the ladder is at a distance greater than 24 feet above lower levels. Notice the difference in heights between the two standards?

The myth about ladders pertains more to portable ladders and the belief that fall protection is never required. Never?

- There is no reference to fall protection in 1910 for portable ladders²¹, but when queried the Standard Interpretation responds with the ANSI Standard A14.2-1990. The Construction standards²² state, “*Requirements relating to fall protection for employees working on stairways and ladders are provided in Subpart X.*” Nothing in Subpart X states that fall protection on portable ladders is required. If you need something more concrete, OSHA has issued several Interpretation letters confirming that fall protection is not required for portable

¹⁷ 29CFR1910(d)

¹⁸ 29CFR1910(d)(5)

¹⁹ Interpretation letter 3/18/1976, Donald Devine

²⁰ 29CFR19261053(a)(18)

²¹ Interpretation letter, 4/2/1996, Dr. Nigel Ellis

²² 1926.500(a)(2)(vii)

ladder²³ use as long as you are working within the envelope of the ladder.²⁴ What is the envelope of the portable ladder? The envelope of a portable ladder consists of:

- A 4:1 climbing angle,
- Climb facing the ladder,
- Ladder (other than stepladder) tied off to prevent sideward slippage,
- Firm footing for the ladder,
- Employee able to maintain 3-point contact while climbing,
- Employee center of gravity (belt buckle) inside the side rails.

The center of gravity is not an OSHA rule, but check any of the manufacturers instructions for ladder use; it's there. If any of the above conditions are not met, you need fall protection.

No. 5 - When you put on a harness and hook up, you are protected is a MYTH

Really? This may be the biggest myth of all. Have you added up the total distance of deployment for the lanyard and shock absorber on a personal fall arrest system? Is your anchor point directly over your head on the SRL hook-up? If not, what is the pendulum arc? Is your horizontal lifeline post-tensioned so you will bounce like crazy, or is it the natural line sag that will stretch and add more vertical distance to your total fall? For all the systems, the anchor point in relation to the D-ring is very important.

- Effect of anchor point locations on total fall distance. (Depicted in Exhibit 3).
 - Add it up. A common 6-foot lanyard, 42" shock absorber deployment, 1-foot of harness stretch, plus the average 5-foot D-ring height from the walking/working surface = 15-1/2 feet minimum. The recommended safety factor is 2 feet, so safely you can figure you need a clear, unobstructed fall zone of 17-1/2 feet from your anchor point. See why anchor placement is so critical? Doesn't do much for you if you are working 10 feet off the floor and the anchor is 2 feet over your head, does it? The only factor you can change is the height relationship between the D-ring on your back and your anchor point.
- Effect of anchor point on Self-retracting Lifelines (SRLs). The SRL is the lanyard. attached to an anchor and a D-ring. Do not attach the SRL to a lanyard. An SRL is required to lock-up in less than 2 feet of fall. Adding it up, 2 feet of fall, 3 feet safety margin and stretch, and the anchor at D-ring height = 9 feet of fall zone. Generally the fall zone will be less because most SRLs are hooked up at, or above head height. If the anchor is moveable so the hookup stays over the wearer, that is your exposure. If the anchor is fixed, you need to make sure you compensate for any horizontal movement away from the anchor point. This adds fall zone distance and increases the probability of striking objects during descent, or swing.
- Effect of the tightness of Horizontal lifelines. Don't be misled by similar sounding names. The SRL, self-retracting lifeline, is called a lifeline, but is always the connector, or lanyard between the anchor and the harness. The horizontal lifeline is an anchor. To it you attach the lanyard w/shock absorber, rope for a rope grab, rope or cable for restraint, etc. When you add up the numbers you must consider what system you are using as you did before, plus allow either enough added stretch for the lifeline. If you post-tension the horizontal lifeline make sure the fall zone is clear of objects you could strike, taking into consideration the more taunt

²³ Interpretation letters, 1/13/2000, Peter Chaney and 5/21/2003, Deborah Caldwell

²⁴ "Stability", Interpretation letter, 4/2/1996, Dr. Nigel Ellis

the line, the more bounce in both the vertical and horizontal area. If vertical clearance is an issue, you may not have a choice and have to post-tension.

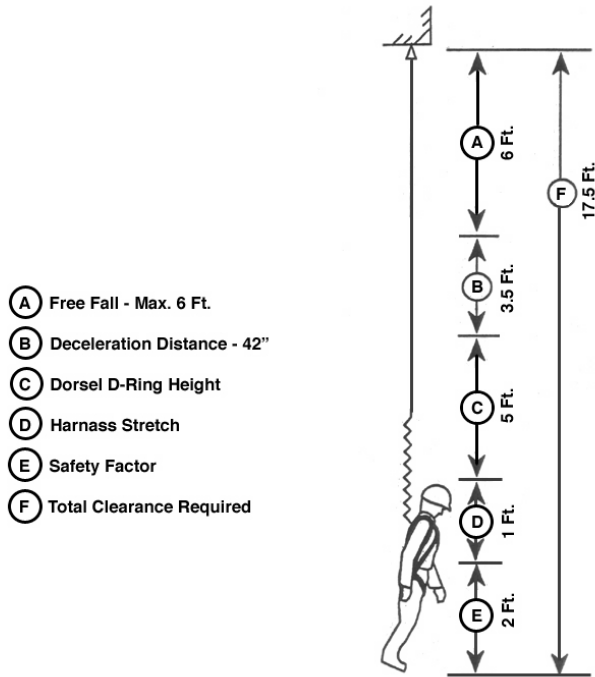


Exhibit 3. Total Fall Clearance Required

It was mentioned earlier that I would touch on steel erection. This is inserted for awareness, not to throw more numbers at you. For example, did you know that workers installing an aluminum storefront, or soffit panels are covered under Subpart R – Steel Erection. The basic trigger height for this work is 15 feet. Connectors and decking installers inside a Controlled decking Zone (CDZ) are allowed a height of 2 stories or 30 feet, whichever is less. Also, above 15 feet the connector will wear fall protection and tie off when practical. There also general and specific training requirements for all workers and be aware that as soon as the deck is installed, the perimeter safety cables are required to be in place. That is cables, plural, a flagged top rail and a mid rail.

No. 6 - Rescue planning often breeds a MISCONCEPTION:

The final misconception for this presentation is that “Call 911” automatically fulfills your responsibility for rescue planning.

- Calling 9-1-1 may work, or may not, depending on your situation. Time, hanging location and available equipment are the determining factors. Rescue after a fall is only addressed in

the Construction standards.²⁵ *“The employer shall provide for prompt rescue of employees in the event of a fall or shall assure that employees are able to rescue themselves.”* Prompt is never defined, but an Interpretation letter²⁶ states, *“There are, however, circumstances that, when taken into consideration with other OSHA requirements, could result in a maximum allowable suspension time. An example of this is where the standard requires that employees exposed to electric shock at fixed work locations (i.e. generating stations) must be able to be reached by trained persons within four (4) minutes.”*²⁷ The letter goes on to explain that the 4 minutes is after discovery.

Suspension trauma is not a myth. Suspension trauma is potentially fatal. Suspension tolerance after a fall may be as little as little as 14 minutes for a full body harness²⁸. Suspension trauma can occur after a period of time in a “suspended harness” after a fall (prolonged static positioning), conscious or unconscious. You have to get the person down “in a timely manner.” Be aware, fall protection harnesses are not the same as climbing harnesses. Climbing harnesses are designed to accommodate prolonged suspension and the D-ring is in the front, their function and construction is entirely different.

Conclusion

With this presentation, I have attempted to clear up some of the myths and misconceptions by using the standards and the interpretation letters concerning fall protection. Many of these erroneous interpretations surfaced as early as 1973 when the OSHA went into effect and some have been very pervasive.

Concerning the first five issues presented, I believe they began as honest mistakes, but mistakes nevertheless. As professionals, we should not perpetuate erroneous interpretations of the standards. The rescue issue focus is a relatively new issue for many. It is my hope you evaluate each potential fall arrest situation and develop your rescue plan to ensure you are providing timely rescue to protect your workers.

Throughout this presentation, I have tried to point out how knowledge and utilization of interpretation letters and other OSHA aids that can give your client more options and a better chance to provide the most effective fall protection in each situation.

I would strongly suggest you review your fall protection policies and procedures, taking into consideration some of the issues from this presentation.

I have included two checklists for your consideration that have been developed and successfully used. They are the Roof Survey form and the PTHA Fall Protection checklist. In addition, included is a general one page OSHA Fall Protection Requirements for your use.

²⁵ CFR1926.502(d)(20)

²⁶ Interpretation letter 4/27/2004, James Stewart

²⁷ 1910.269(b)(1)(ii)

²⁸ Brinkley Report to OSHA – 11/86

Attachments

Fall Protection PTHA Planning Sheet		Competent Fall Protection Person _____
Bldg. _____	JO / WT _____	Date _____
Eliminate Fall Hazard		Can the Fall Hazard be eliminated or worked from the ground?
Access- (circle) Door, Hatch, Fixed Ladder, Port Ladder, Aerial Lift, Scaffold		Hoist Area Identified- _____
Traditional Fall Protection	Physical Barriers	
Guardrail (permanent)	<input type="checkbox"/> 42" high, Minimum 200#s Out and Down	
Cable Guardrail	<input type="checkbox"/> 39"- 45" high, Minimum . 1/4" dia Wire Rope flagged every 6'	
Guardrails (portable)	<input type="checkbox"/> 6' from edge unless parapeted	
Scaffolding	<input type="checkbox"/> 42" above walking / work surface	
Hole Covers	<input type="checkbox"/> 2x's Load and Labeled "HOLE"	
Warning Line System (non conforming guardrail)	<input type="checkbox"/> 6' back "Industry" 15' back "Construction" flagged every 6'	
Fall Restraint	Fall Restraint must not allow center of gravity to reach edge in any direction	
Restraint Anchor 3m* or 2x's	<input type="checkbox"/> Anchor Identified by FP Competent Person if not previously tagged (Yellow Fall Restraint Tag)	
Full Body Harness	<input type="checkbox"/> Can use any harness rings for restraint	
Lanyard	<input type="checkbox"/> With or Without Shock Asorber, Adjustable length if necessary	
SRL Retracting Lifeline	<input type="checkbox"/> Maximun length can't reach edge in any direction	
Lifeline and Rope Grab	<input type="checkbox"/> Lifeline must have stop to prevent reaching edge in any direction	
Horizontal Life Line	<input type="checkbox"/> Horizontal Lifeline must prevent reaching edge in any direction	
Fall Arrest	Fall Arrest, maxium 6' fall, maximum impact on body Approx 900#s	
Arrest Anchor 5m* or 2x's	<input type="checkbox"/> Anchor Identified by FP Competent Person if not previously tagged (Red Fall Arrest Tag)	
Full Body Harness	<input type="checkbox"/> Dorsal Ring only for fall arrest	
Lanyard	<input type="checkbox"/> Required Shock Asorber, Adjustable length if necessary, 6' Maximum length	
SRL Retracting Lifeline	<input type="checkbox"/> Maximum 30 degree angle, swing hazard	
Lifeline and Rope Grab	<input type="checkbox"/> Lifeline must have stop to prevent grab from running off tail end of lifeline.	
Horizontal Life Line	<input type="checkbox"/> Horizontal Lifeline 3,600# anchors, allow for stretch and shock assorber deployment	
Ladder Climbing Device	<input type="checkbox"/> Full Body Harness connected at Front D-Ring, 9" maximum Lanyard/ Connector	
Safety Monitoring	Roofers doing Roofing Work with Roofing Material, incuding Gutter Work	
	Low Slope Roof, Less than 16' potential fall	
	Monitor in Safety Vest must have all roofers in line of sight and within normal voice range	
	Safety Monitor can watch a maximum of 3 roofers	
	No Mechanical Equipment allowed while using Safety Monitoring	
	Roofers shall work facing the hazard and down in three point contact if possible	
Rescue Plan	Never Work Alone Using Fall Protection	
	How would you rescue?	Call 911 Cell 925 447-6880
* m = 1000		
Notes: _____		

(See Other Side)		

Roof Fall Protection Assessment				Date: _____	Bldg. No. _____																																																																																																																																																											
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Type of building:	(X)	Permanent	Modular	Trailer	Other																																																																																																																																																											
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Low Slope <4/12	(Y/N)		Steep Roof >4/12 (Y/N)																																																																																																																																																													
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OSHA FALL PROTECTION REQUIREMENTS

General Industry : Operations and Maintenance; trigger height = 4' above walking/working surface

Construction : Construction, Alterations, Modifications, Demolition, Roofing, Painting; trigger height = 6' above walking/working surface

Horizontal distance: Without fall protection - from unprotected edge = 50' minimum

Free-fall distance: Never exceeds six (6) feet

Safety Monitor: (Low slope) Roofing work ONLY, roof >50' requires warning line @6', monitor to edge.

Work Positioning Max free-fall = 2', anchorage = 3,000#, connectors = 5,000#

Controlled Access Zones: Overhand bricklaying and related leading-edge construction work only.

<u>Guardrails, parapets:</u>	39"- 45" high; withstand 200# at top rail; Guardrails must have mid-rail & toeboards if tools, material can fall to lower level. <u>Materials</u> - constructed of min. 500# strength material (NO BARRIER TAPE) Pipe 1-½" min.; Wood 2" x 4" min; Cables (2) , minimum ¼" diameter, top cable flagged at 6' intervals, no deflection under pressure below 39".
<u>Skylights:</u> systems.	200# force cover; guardrail; or fall restraint/fall arrest; warning line
<u>Warning Line Systems</u>	(Low slope roofs ONLY) Gen. Industry – “Designated Area” – minimum 6' from unprotected edge Construction – “Non-conforming Guardrail” – minimum 15' from unprotected edge
	<u>System requirements</u> – uprights withstand 16# force at 30" height; line to be rope, wire, chain of 500# tensile strength, flagged at 6' intervals; height 34"-39"; line attached to uprights – no line slip.
<u>Fall Restraint</u>	Worker's center of gravity cannot fall over the unprotected edge <u>in any direction</u> . Lanyard / rope = 3,000#; body belt or full body harness; anchor = 2 x force exerted, or 3,000#.
<u>Personal Fall Arrest</u>	<u>Basic system</u> = Full-body harness, 6' shock-absorbing lanyard, 5,000# anchorage (per person); minimum clearance = 17.5' from anchor (6' lanyard, 3.5' shock absorber, 5' surface to dorsal D-ring, 1' harness stretch, 2' safety factor). Engineered anchor may be 3,600#.
	<u>Self-retracting Lifeline (SRL)</u> – 5,000# anchorage (certain conditions 3,000#), minimum clearance; non-shock absorbing lanyard = 5' ; shock absorbing (read label) = 7.5' ; account for pendulum effect.
<u>Horizontal Lifeline stretch.</u>	(Designed by Qualified Person) minimum clearance = 17.5' + lifeline
<u>Vertical Lifeline</u>	5,000# anchor (only one worker per lifeline) for clearance add 1' for rope grab to activate, minimum clearance = 7.5' + lanyard length .
<u>Ladder Climbing (chest) D-Devices</u>	Maximum 9" connector between the ladder safety device and a front ring, engineered support. Must limit fall distance to 2' or less.
<u>RESCUE planning:</u>	Prompt rescue – danger of suspension trauma