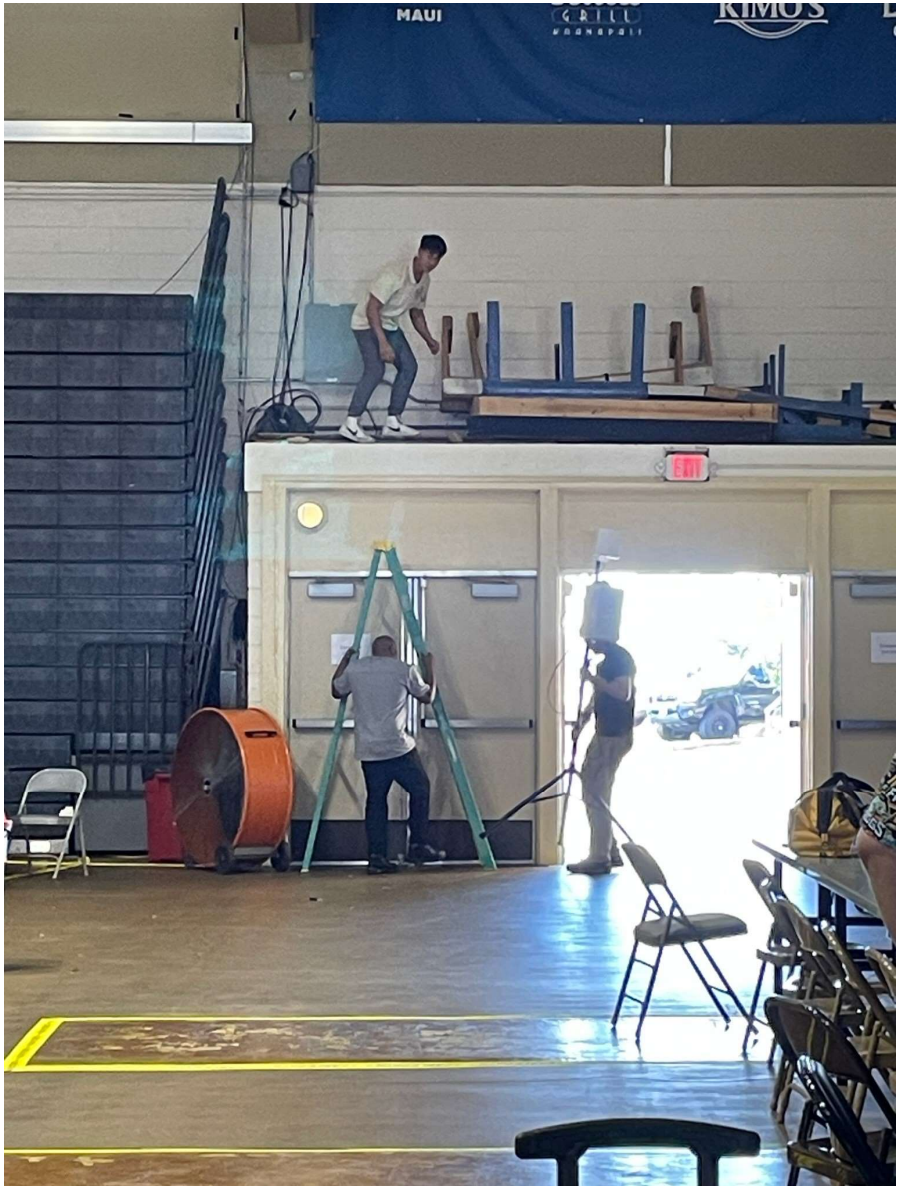
Beyond the ?-Foot Rule

Personal Fall Arrest Systems & Training

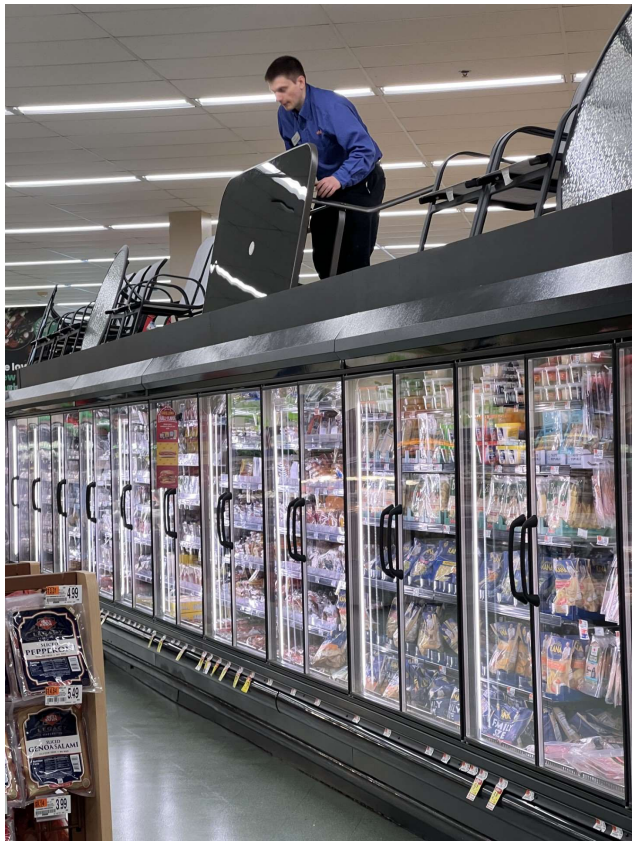
See Something, Say Something

Supervisor's response "Somebody get him a harness"



Lahaina Civic Center Maui, HI Aug-Sep 2023

Fall Hazards



See Something, Say Something

Shaw's Supermarket Burlington, MA

See Something, Say Something

Response “it was a language issue”

Casino in MA

Car Wash Woburn, MA

Falls

865

Fatal Falls in 2022

About 17 per day

Hundreds of thousands were injured severely enough to require days off from work

165 workers were killed in falls on the same level in 2022

LATEST NUMBERS

Nonfatal injuries and illnesses, private industry

2,804,200 Total recordable cases: in 2022

Fatal work-related injuries

5,486 Total fatal injuries (all sectors): in 2022

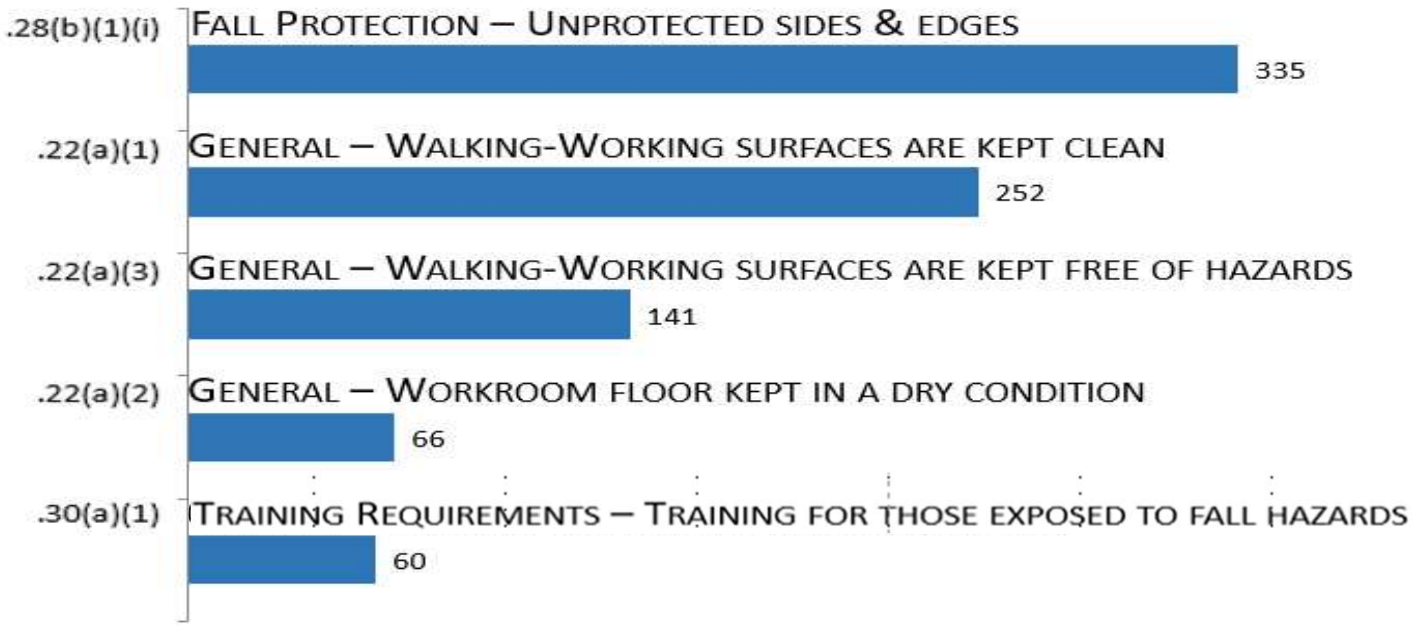
BLS 2022

Source:
https://www.bls.gov/news.release/cfoi.nr0.htm

Walking-Working Surfaces [1910.21 – .30]

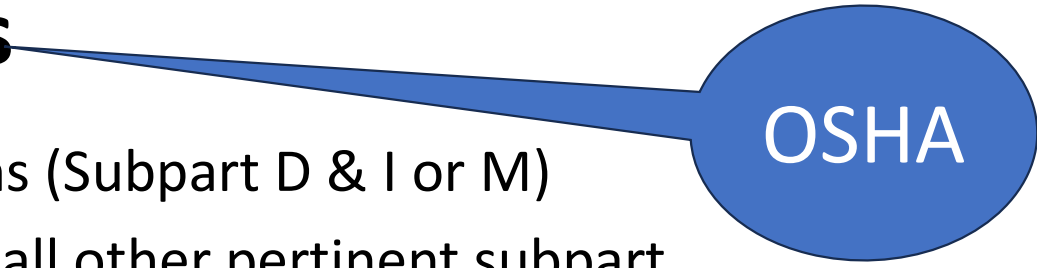
29 CFR 1910.

Subpart D



Source OSHA FY23

FPSs Criteria & Practices



- ERs comply with applicable provisions (Subpart D & I or M)
- ERs provide & install FPSs, & comply all other pertinent subpart requirements **before work** that necessitates FP

1910.140 & 1926.502(d) PFAS

- Max arresting force 1800 lbs.
- Don’t contact lower level or ground
- Freefall not to exceed six feet*
- 5000 lb. anchor or safety factor of 2 by QP
- HLL, **designed**, **installed** and **used** under supervision of QP (all three)

Equipment Selection/Choices

PFAS - Selection

- Who selects?
  - GC/PM/Super/Foreman/Worker/Safety/Purchasing/Admin/Vendor/Other
- How?
  - Equipment costs ($30 to $500 or more per item)
  - Hazard(s)?
  - Type of work?
  - Type of Fall?
  - Environment?
  - Worker knowledge?
  - Availability?
  - Rescue availability?

Equipment Selection

Which components do you select? How and why?

One manufacturer has:

- 1187 Harness Choices
- 120 Energy Absorbing Lanyards
- 67 Positioning Lanyards
- 517 Self-Retracting Lifelines/Devices (aka Yoyos)
- 202 Anchorage Connectors
- 38 Horizontal Lifelines
- 199 Vertical Lifelines, etc.

Equipment Choices

Harness Application

- [ ] Positioning (406)
- [ ] Climbing (373)
- [ ] General Purpose (145)
- [ ] Arc-flash (127)
- [ ] Rescue (59)
- [ ] Retrieval (19)
- [ ] Hot Work (12)
- [ ] Bosun (9)
- [ ] Derrick (4)
- [ ] Suspension (3)
- [ ] Rigging (3)
- [ ] Wind Energy (2)
- [ ] Construction (2)
- [ ] Mining (2)
- [ ] Confined Space (1)

D-ring Placement

- [ ] Back (903)
- [ ] Side (531)
- [ ] Front (452)
- [ ] Suspension (106)
- [ ] Shoulder (64)
- [ ] Back with Extension (30)
- [ ] Lifting (12)
- [ ] Hip (3)
- [ ] Rear Waist (2)
- [ ] Rescue (1)

Leg Buckle Type

- [ ] Tongue Buckle (59)
- [ ] Dual Lock Quick Connect (49)
- [ ] Quick Connect (43)
- [ ] Auto-locking Quick Connect (1)

Chest Buckle Type

- [ ] Quick Connect (74)
- [ ] Dual Lock Quick Connect (60)
- [ ] Pass-through (16)

Harness Size

- [ ] X-Large (192)
- [ ] Small (179)
- [ ] Medium (163)
- [ ] Large (159)
- [ ] 2X (139)
- [ ] X-Small (58)
- [ ] Universal (40)
- [ ] 3X (28)
- [ ] X-Small/Small (1)
- [ ] X-Large/2X (1)
- [ ] Medium/Large (1)

Harnesses

How many D-rings do you need, what are they all for?

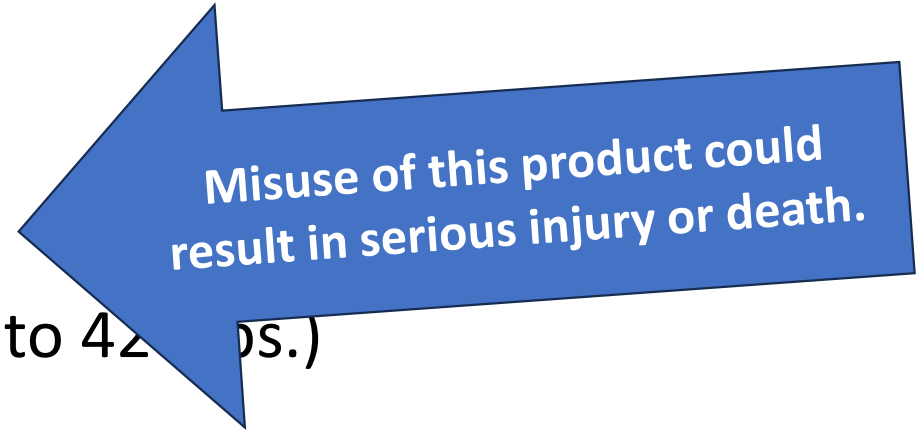
Harness Choices. Again, one manufacturer has 1187 in their line

D-Rings

	Application Type	Attachment Elements
Ⓐ	Fall Arrest	Dorsal, Sternal, Frontal
Ⓑ	Restraint	Dorsal, Sternal, Frontal, Hip, Rear Waist
Ⓒ	Work Positioning	Frontal, Hip
Ⓓ	Rescue	Dorsal, Sternal, Frontal, Shoulder
Ⓔ	Controlled Descent	Dorsal, Sternal, Frontal
Ⓕ	Climbing	Dorsal, Sternal

Harnesses

- Manufacturer's warnings criteria
- Harness capacities (130-300 lbs. up to 42 lbs.)
  - Less than 130 lbs.?
  - Sizes?
- Donning
- Adjustment/Size/Fit
- Manufacturer's out-of-service criteria
- D-ring use



Length 23-feet

- Cost $49
- 330 lbs. fall arrester
- Steel wire rope
- Breaking strength 8900n (2000 lbs.)
- Tensile strength 330 lbs.
- Wire rope diameter 7mm
- Aluminum 3.3 kg
  ~ 7 lbs.

Force

8900	=	2000.8
Newton		Pound-force

Length 20-feet

- Cost $650
- Steel wire rope
- ANSI Z359.14 Class 1 Standards
- OSHA 1926.502
- Galvanized steel cable
- Plastic housing 10 lbs.
- Manufacture supplies a certificate of Compliance

Harness Donning

SAFETY INFORMATION

Please read, understand, and follow all safety information contained in these instructions, prior to the use of this product.

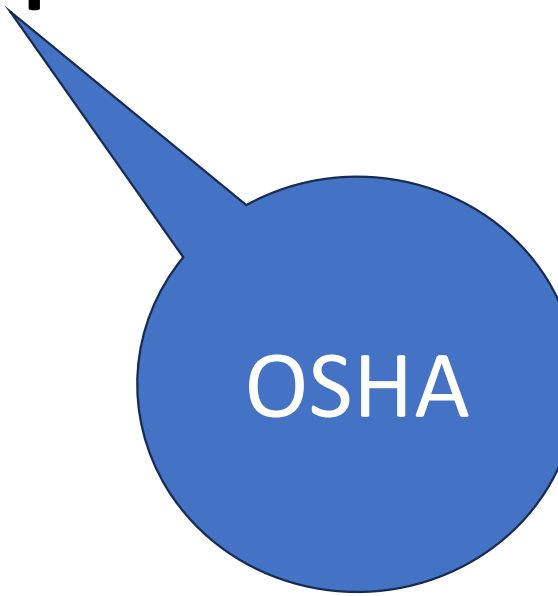
FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.

These instructions must be provided to the user of the equipment. Retain these instructions for future reference.

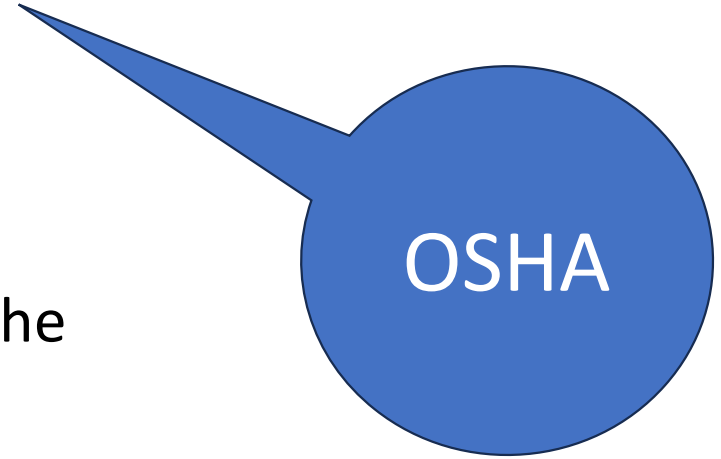

Miller approves the
"Sharpie" brand
03/07/2007

1910.30… Fall Protection Training Requirements

- Before exposed, employers must provide training for each employee who uses personal fall protection systems…
- Trained by Qualified Person
- Fall hazards and recognition…
- Procedures to minimize those hazards
- 1910.30(d)
  - Training must be **understandable**. The employer must provide information and training to each employee in a manner that the employee understands.
- Retraining



1926.503… Fall Protection Training Requirements



Employers shall provide to who might be exposed

Employees need to be able to recognize the hazards

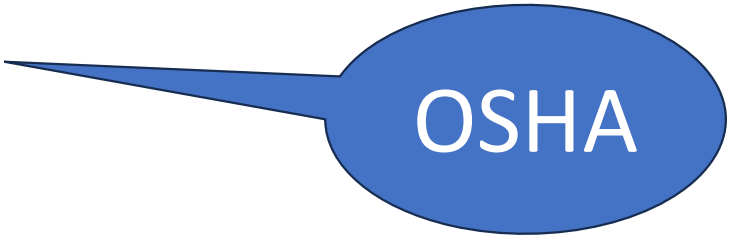
Employers shall assure each employee trained, as necessary, by a Competent Person ***qualified in…***

Construction – Training by CP, Qualified in…
General Industry – Training by a Qualified Person

- Nature of fall hazards in work area
- Correct procedures for erecting, maintaining, disassembling and inspection FPSs to be used
- Use and operation of PFASs, and other FP systems
- Role of employee if Safety Monitoring system used
- Limitations of mechanical equipment Low Slope Roof
- Handling & storing of materials and erection of overhead protection; and
- Role of employees using FPP or designated area

OSHA

Competent vs. Qualified Training in Fall Protection



1926.32(f) & 1910.140 (CP referenced 205 times in 1926)

"**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**.

1926.32(m) & 1910.21 & 140 (QP referenced 251 times in 1926)

"Qualified" means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, **has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.**

ANSI Z359.2 Competent Person

Specifies 15 specific duties for the CP

1. Supervise and implement fall protection
2. Understand regulations and standards
3. Identify fall hazards
4. Control swing fall hazards
5. Stop unsafe work practices
6. Prepare and approve procedures
7. Specify systems and equipment

4.3.5 The qualified person shall meet the qualifications of a competent person.

ANSI Z359.2 Competent Person

8. Select and inspect non-certified anchorages
9. Verify installation
10. Train authorized persons
11. Establish fall distance requirements
12. Ensure prompt rescue
13. Remove damaged equipment
14. Conduct formal equipment inspections
15. Investigate incidents

OSHA→WWS structural integrity (1926.501(a)(2))

Qualified Person ANSI/ASSP Z359.2

Qualified Person. (Z359.2) A person with a recognized degree or professional certificate and with extensive knowledge, training and experience in the fall protection and rescue field who is capable of designing, analyzing, evaluating, and specifying fall protection and rescue systems to the extent required by these standards.

NOTE: Many jurisdictions require that individuals who design or evaluate physical structures be registered with the jurisdiction as a professional engineer.

The extent to which qualified persons are required to have specific knowledge, training and experience is governed by the substantive requirements of these standards as they apply to the responsibilities of various personnel. For example, this definition does not imply that a qualified person is required to design, evaluate and/or specify rescue equipment, systems or procedures for emergency response teams and rescuers meeting the requirements of these standards.

Authorized Person (user)

- ANSI Specifies 4 specific duties for APs
  - Follow policies, procedures and instructions
  - Recognize unsafe or hazardous conditions/actions
  - Properly use, maintain, store and care for equipment
  - Conduct equipment pre-use inspections
- Authorized Person Training as outlined in ANSI Z359.2-2017. (4-8 hours or more)

Appropriate Training by a QP/CP

Training

OSHA LOI

In a letter of interpretation addressed to the International Safety Equipment Association (ISEA), **OSHA indicated** that fall protection trainers who are compliant with ANSI/ASSP Z359 (fall protection/arrest) and ANSI/ASSP Z490 (OSH training) **will meet the definition of qualified** in the agency's Walking and Working Surfaces rule.

"This will enable more competent trainers to meet the nation's fall protection training needs to keep workers safe," says Marc Harkins, chair of ISEA's Fall Protection Group and product group manager for MSA Safety. Randall Wingfield, chair of the Z359 Accredited Standards Committee and president of Gravitec Systems Inc., adds, "Requiring workers at height to be appropriately educated and trained and now having the **ANSI Z359.2 requirements of competent person and trainers referenced by federal regulations will initiate definitive training."** LOI

https://www.osha.gov/laws-regs/standardinterpretations/2017-08-31

Looking at the entirety of the trainer and competent person requirements in ANSI/ASSE Z490.1-2016 and ANSI/ASSE Z395.2 – 2017, OSHA will consider that a trainer who is a designated competent person and meets all of the qualifications for trainers and competent persons in ANSI/ASSE standards is a "qualified person" for purposes of the final rule (§§1910.21(b) and 1910.30(a)(2)).

The expertise and knowledge that ANSI/ASSE Z490.1 – 2016 (§5) requires fall protection trainers to possess (i.e., subject matter expertise, training experience, and technical knowledge in the subjects they teach acquired through training, education, and/or experience; and participation in continuing education) satisfies the requirement in the final rule that trainers at least have "extensive knowledge, training and experience" in fall protection (§1910.21(b)).

In addition, the responsibilities that ANSI/ASSE Z359.2 – 2017 (§4.4) requires competent persons to perform and the extensive training they must have (§5.3), clearly indicates that a competent person has "ability to solve or resolve problems relating to the subject matter, the work, or the project" that the final rule requires (§1910.21(b)).

So, who is conducting your worker Fall Protection Training?

Plan

- *ahead to get the job done safely.*

Provide

- *the right equipment*

LOI requires trainers to be Qualified and Competent?

Train

- *Everyone to use the equipment safely*

Training

From the website

This 1-hour online course satisfies the training and retraining requirements for OSHA 29 CFR 1926 Subpart M Fall Protection Standard, Including Residential Construction Fall Protection.

Training

1910.30(a)(2)

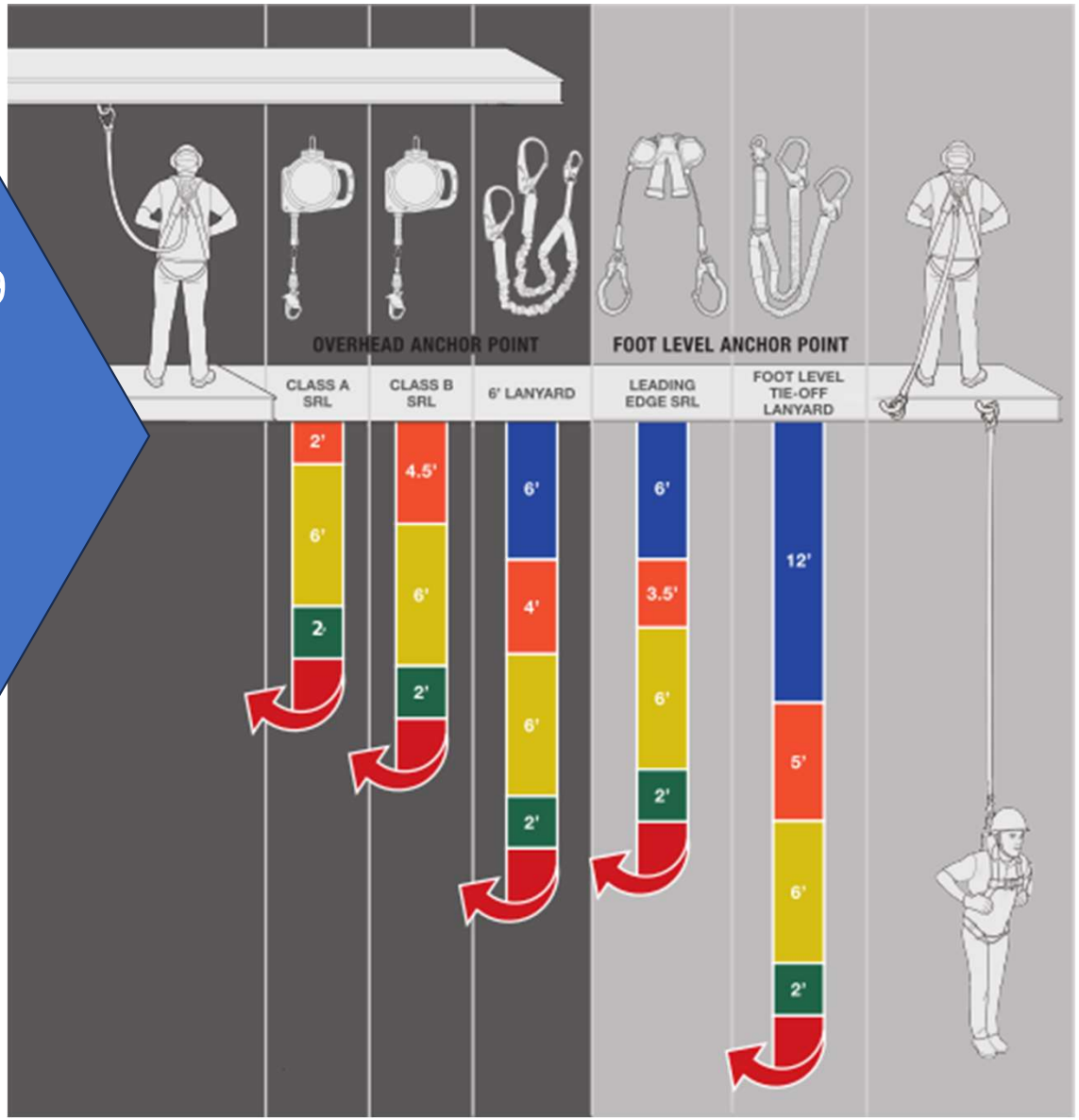
- The employer must ensure that each employee is trained by a **qualified person**.

1926.503(a)(2)

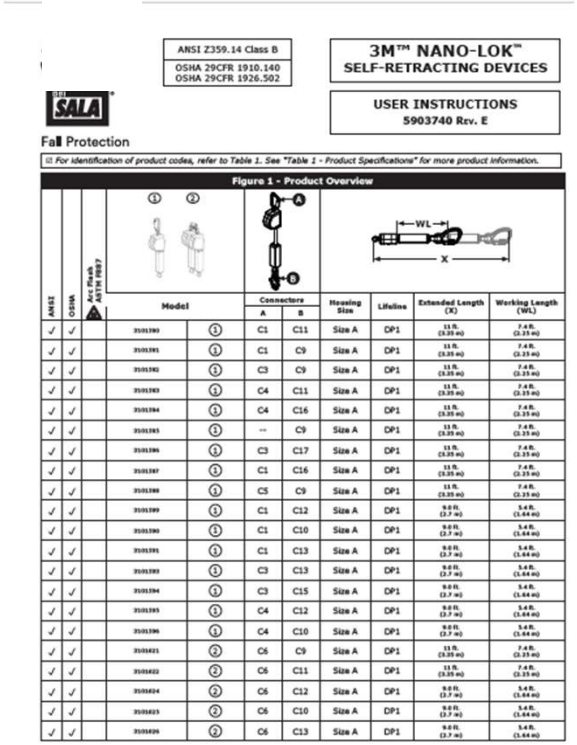
- The employer shall assure that each employee has been trained, as necessary**, by a competent person qualified** in the following areas:

Is this a Competent or Qualified Person?

ANSI/ASSP Z359 update August 2023 Class 1 and Class 2 SRLS



Training



ANSI Z359.14 Class B
OSHA 29CFR 1910.140
OSHA 29CFR 1926.502

3M™ NANO-LOK™ SELF-RETRACTING DEVICES

USER INSTRUCTIONS
5903740 Rev. E

SALA
Fall Protection

☑ For identification of product codes, refer to Table 1. See "Table 1 - Product Specifications" for more product information.

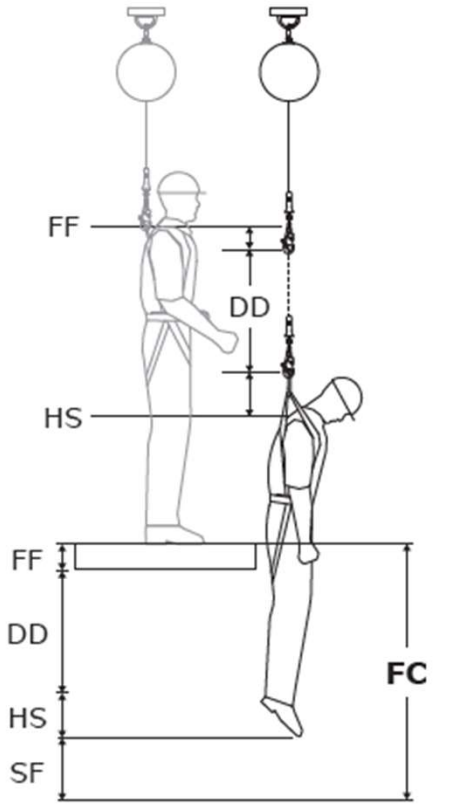
Figure 1 - Product Overview

ANSI	OSHA	Arc Flash ASTM F887	Model		Connectors A	Connectors B	Housing Size	Lifeline	Extended Length (X)	Working Length (WL)
✓	✓		3101390	①	C1	C11	Size A	DP1	11 ft. (3.35 m)	7.4 ft. (2.25 m)
✓	✓		3101391	①	C1	C9	Size A	DP1	11 ft. (3.35 m)	7.4 ft. (2.25 m)
✓	✓		3101392	①	C3	C9	Size A	DP1	11 ft. (3.35 m)	7.4 ft. (2.25 m)
✓	✓		3101393	①	C4	C11	Size A	DP1	11 ft. (3.35 m)	7.4 ft. (2.25 m)
✓	✓		3101394	①	C4	C16	Size A	DP1	11 ft. (3.35 m)	7.4 ft. (2.25 m)
✓	✓		3101395	①	--	C9	Size A	DP1	11 ft. (3.35 m)	7.4 ft. (2.25 m)
✓	✓		3101396	①	C3	C17	Size A	DP1	11 ft. (3.35 m)	7.4 ft. (2.25 m)
✓	✓		3101397	①	C1	C16	Size A	DP1	11 ft. (3.35 m)	7.4 ft. (2.25 m)
✓	✓		3101398	①	C5	C9	Size A	DP1	11 ft. (3.35 m)	7.4 ft. (2.25 m)
✓	✓		3101399	①	C1	C12	Size A	DP1	9.0 ft. (2.7 m)	5.4 ft. (1.64 m)
✓	✓		3101390	①	C1	C10	Size A	DP1	9.0 ft. (2.7 m)	5.4 ft. (1.64 m)
✓	✓		3101391	①	C1	C13	Size A	DP1	9.0 ft. (2.7 m)	5.4 ft. (1.64 m)
✓	✓		3101392	①	C3	C13	Size A	DP1	9.0 ft. (2.7 m)	5.4 ft. (1.64 m)
✓	✓		3101394	①	C3	C15	Size A	DP1	9.0 ft. (2.7 m)	5.4 ft. (1.64 m)
✓	✓		3101395	①	C4	C12	Size A	DP1	9.0 ft. (2.7 m)	5.4 ft. (1.64 m)
✓	✓		3101396	①	C4	C10	Size A	DP1	9.0 ft. (2.7 m)	5.4 ft. (1.64 m)
✓	✓		3101421	②	C5	C9	Size A	DP1	11 ft. (3.35 m)	7.4 ft. (2.25 m)
✓	✓		3101422	②	C6	C11	Size A	DP1	11 ft. (3.35 m)	7.4 ft. (2.25 m)
✓	✓		3101424	②	C6	C12	Size A	DP1	9.0 ft. (2.7 m)	5.4 ft. (1.64 m)
✓	✓		3101425	②	C6	C10	Size A	DP1	9.0 ft. (2.7 m)	5.4 ft. (1.64 m)
✓	✓		3101426	②	C6	C13	Size A	DP1	9.0 ft. (2.7 m)	5.4 ft. (1.64 m)

Extended Length Self-Retracting Lifeline with Anchor Hook 3101584, Web, 11 ft (Instructions cover 40 model numbers)

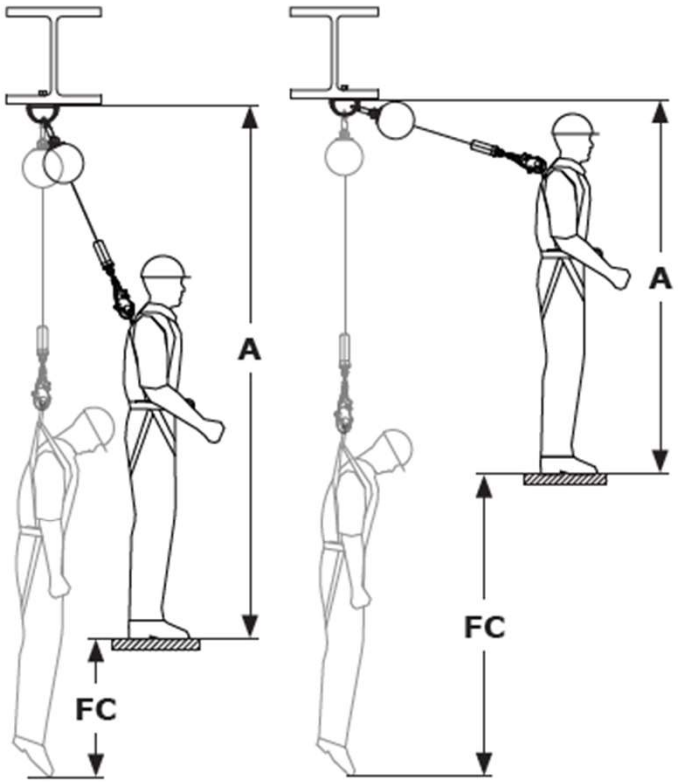
Figure 5 - Fall Clearance Requirements

1

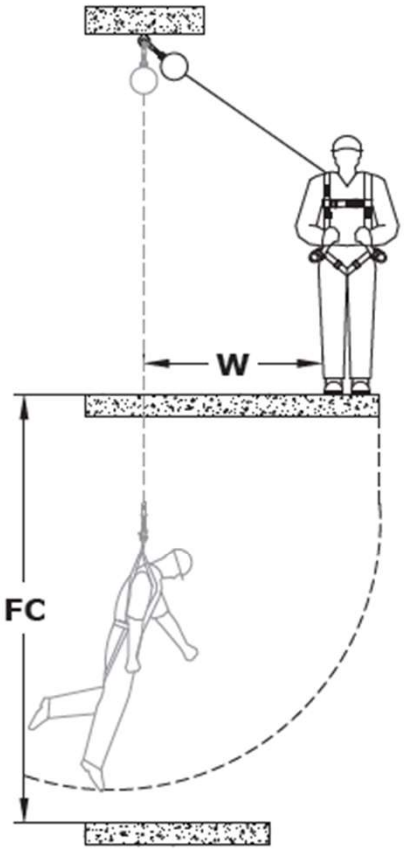


FC = FF + DD + HS + SF

2

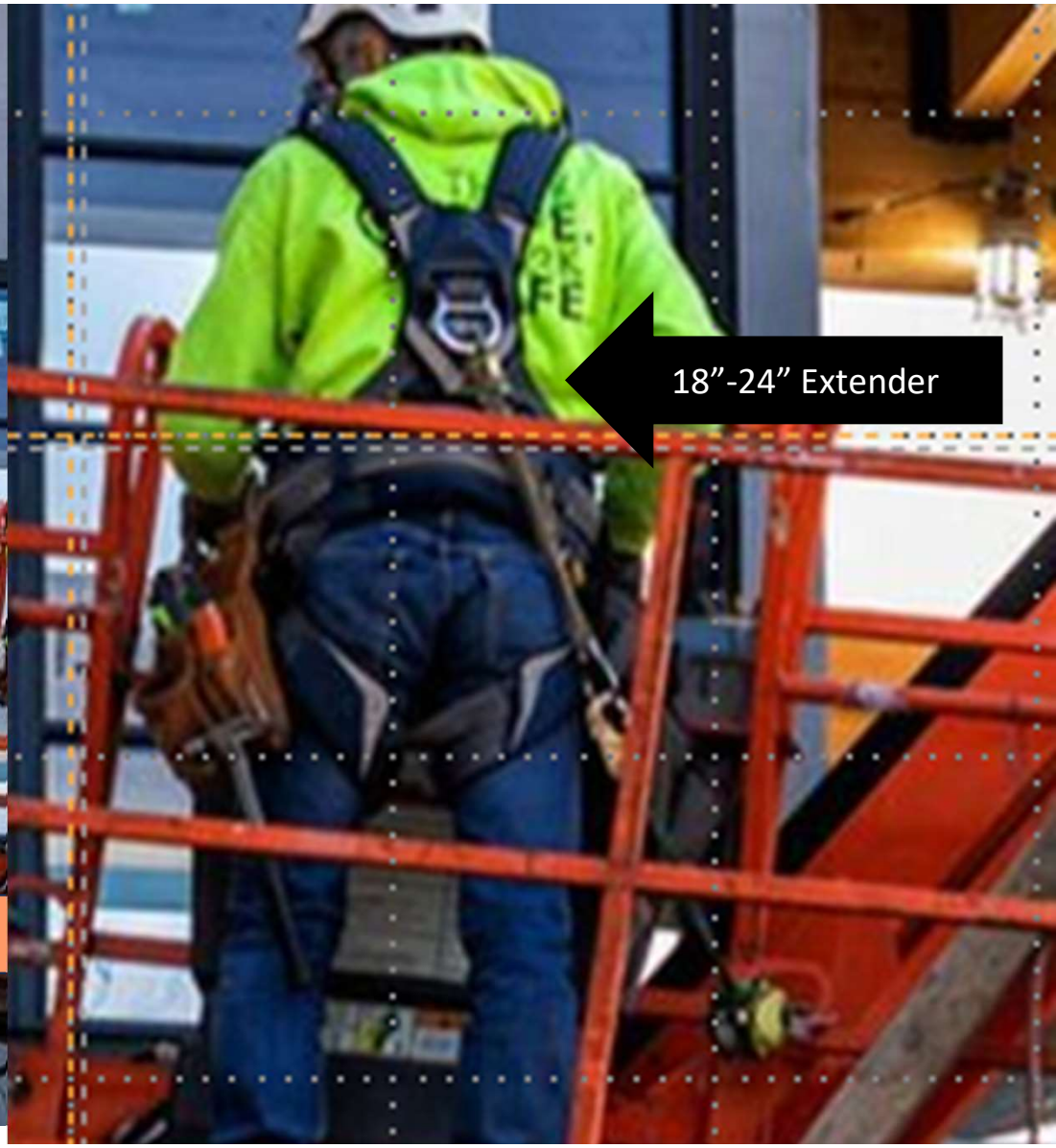


3



AERIAL WORK PLATFORMS: Use of the SRD on aerial work platforms is permissible, provided the following criteria are met:

1. SRDs generally will not restrain workers from falling out of aerial work platforms or elevated working surfaces. To restrain users from falling out of aerial work platforms, Positioning Lanyards of sufficiently short lengths should be used.
2. Aerial work platforms must have guardrails or gates at all accessible edges along their perimeter unless anchorages for the SRDs are located overhead. The edges on the top rails of all guardrails and gates over which the user might fall must have a minimum radius of 1/8 in. (0.3 cm).
3. Anchorages of appropriate strength and compatibility must always be used for securing SRDs (see Section 1.4).
4. Swing fall hazards may exist, especially when working near corners or out away from anchorage points. Added fall clearance is needed where the potential for swing fall exists (see Figure 5).
5. All sharp edges which the SRD's lifeline may contact during a fall must be eliminated or covered over. All edges the SRD lifeline may contact in a fall must be smooth with an edge radius of 1/8 in. (0.3 cm) or greater. Potential pinch points between adjacent surfaces where the lifeline may catch during a fall must be eliminated.


18”-24” Extender

Training

If the D-ring extension assemblies are used in conjunction with a self retracting lifeline or an energy absorbing lanyard in a fall arrest application, the length of the D-ring extension assembly must be taken into account when calculating the free fall distance and the fall clearance requirements.

Is it compatible?


D-Ring Extender
1:20

Manufacturer's Instructions

These instructions must be provided to the worker using this equipment. The worker must read and understand the manufacturer's instructions for each component or part of the complete system. Manufacturer's instructions must be followed for proper use, care, and maintenance of this product. These instructions must be retained and be kept available for the worker's reference at all times. Alterations or misuse of this product, or failure to follow instructions, may result in serious injury or death.

Consult a doctor if there is reason to doubt your fitness to safely absorb the shock of a fall event. Age and fitness seriously affect a worker's ability to withstand falls. Pregnant women or minors must not use this equipment.

The user of the equipment discussed in this manual must read and understand the entire manual before beginning work.

Leading edge means the unprotected side and edge of a floor, roof, or form work for a floor or other walking/working surface (such as deck) which changes location as additional floor, roof, decking, or form work sections are placed, formed, or constructed; see Figure 1.

The Competent Person may find this data useful with planning anchorage location and calculating fall arrest loads and distances from the walking/working level to the nearest obstruction or lower level. See Section 5.

6' ViewPack® Elastic Energy Absorbing Lanyard, Double-leg with Steel Connectors

- Static Strength 5,000 lb min.
- Max. Arrest Distance 48"
- Avg. Arrest Force 900 lb
- Max. Arrest Force1,800 lb
- OSHA User Capacity130 to 310 lb. max.
- Instruction manual is for over 80 model numbers

Courtesy of FallTech

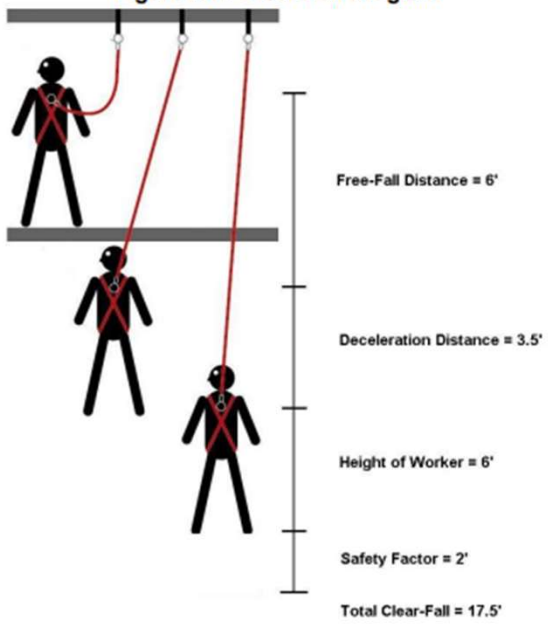
Fall Distance Calculation

- Static Strength 5,000 lb. min.
- Max. Arrest Distance 48“
- Anchorage must be overhead
- Can I connect to an anchorage below d-ring height?

	Example Values	Actual Values
Free-Fall Distance (OSHA allows up to 6')	**6'**	
Deceleration Distance (Typically 3.5' or less)	**3.5'**	
Height of Worker	**6'**	
Safety Factor (Minimum of 2')	**2'**	
Total (Sum of all values)	**17.5'**	

See figure 2.1 below for a graphic illustration of Clear-Fall Distance and the method for calculating.

Figure 2.1: Clear-Fall Diagram



Courtesy of FallTech

Training

ANSI/ASSP Z359.14-2021

Class 1

Anchor at or above dorsal D-ring

ANSI/ASSP Z359.14-2021

Class 2

Anchor above or below dorsal D-ring

SRL	SRL-P
	
	

Courtesy of FallTech

Full Fall Clearance Diagrams and Charts

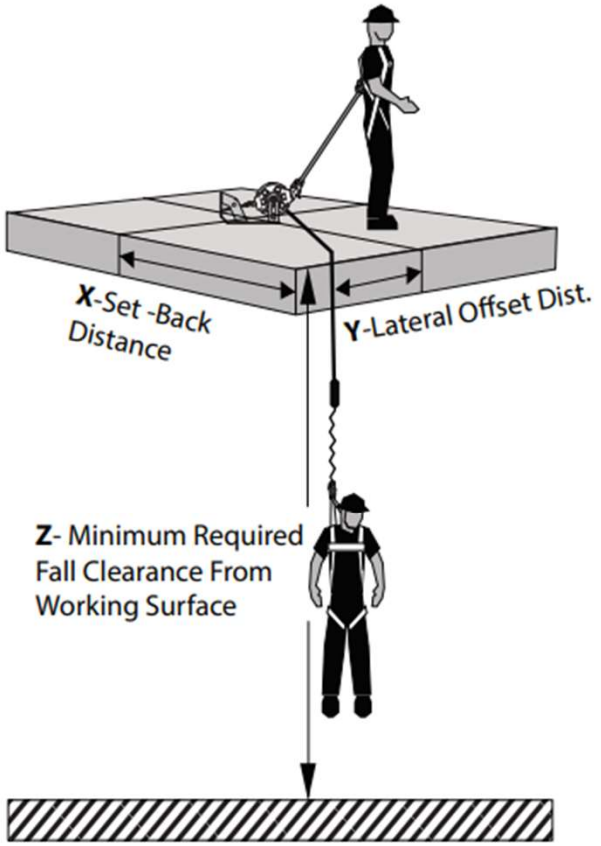
Labels now on the SRL

Non-Overhead Anchorage Clearance

Courtesy of FallTech

Chart 2 - MRFC Non-Overhead Anchorage

Chart 2 Non-Overhead	Lateral Offset Distance (Y) →												
SRD Setback Distance from Edge (X)	0 ft (0 m)	2 ft (0.7 m)	4 ft (1.3 m)	6 ft (1.9 m)	8 ft (2.5 m)	10 ft (3.1 m)	12 ft (3.7 m)	14 ft (4.3 m)	16 ft (4.9 m)	18 ft (5.5 m)	20 ft (6.1 m)	22 ft (6.8 m)	24 ft (7.4 m)
0 ft (0 m)	16.5 (5.1)	18.5 (5.7)	20.5 (6.3)	22.5 (6.9)	24.5 (7.5)	26.5 (8.1)	28.5 (8.7)	30.5 (9.3)	32.5 (10.0)	34.5 (10.6)	36.5 (11.2)	38.5 (11.8)	36.5 (12.4)
5 ft (1.6 m)	16.5 (5.1)	17.0 (5.2)	18.0 (5.5)	19.5 (5.9)	21.0 (6.4)	23.0 (7.0)	24.5 (7.5)	26.5 (8.1)	28.5 (8.7)	30.5 (9.2)	32.5 (9.8)	34.5 (10.4)	36.5 (11.0)
10 ft (3.1 m)	16.5 (5.1)	17.0 (5.1)	17.5 (5.3)	18.5 (5.6)	19.5 (5.9)	21.0 (6.3)	22.5 (6.8)	24.0 (7.3)	25.5 (7.8)	27.5 (8.3)	29.0 (8.8)	31.0 (9.4)	32.5 (10.0)
15 ft (4.6 m)	16.5 (5.1)	17.0 (5.1)	17.0 (5.2)	18.0 (5.4)	18.5 (5.6)	19.5 (6.0)	21.0 (6.4)	22.0 (6.8)	23.5 (7.2)	25.0 (7.6)	26.5 (8.1)	28.5 (8.6)	30.0 (9.1)
20 ft (6.1 m)	16.5 (5.1)	17.0 (5.1)	17.0 (5.2)	17.5 (5.3)	18.0 (5.5)	19.0 (5.8)	20.0 (6.1)	21.0 (6.4)	22.5 (6.8)	23.5 (7.2)	25.0 (7.6)	26.5 (8.0)	28.0 (8.5)
25 ft (7.7 m)	16.5 (5.1)	17.0 (5.1)	17.0 (5.2)	17.5 (5.3)	18.0 (5.5)	18.5 (5.7)	19.5 (5.9)	20.5 (6.2)	21.5 (6.5)	22.5 (6.8)	23.5 (7.2)	25.0 (7.6)	26.5 (8.0)
30 ft (9.2 m)	16.5 (5.1)	17.0 (5.1)	17.0 (5.2)	17.5 (5.3)	17.5 (5.4)	18.5 (5.6)	19.0 (5.8)	20.0 (6.0)	20.5 (6.3)	21.5 (6.6)	23.0 (6.9)	24.0 (7.3)	25.0 (7.6)
35 ft (10.7 m)	16.5 (5.1)	17.0 (5.1)	17.0 (5.2)	17.5 (5.4)	17.5 (5.4)	18.0 (5.5)	18.5 (5.7)	19.5 (5.9)	20.0 (6.1)	21.0 (6.4)	22.0 (6.7)	23.0 (7.0)	24.0 (7.3)
40 ft (12.2 m)	16.5 (5.1)	17.0 (5.1)	17.0 (5.1)	17.0 (5.1)	17.5 (5.3)	18.0 (5.4)	18.5 (5.6)	19.0 (5.8)	20.0 (6.0)	20.5 (6.3)	21.5 (6.5)	22.5 (6.8)	23.5 (7.1)
45 ft (13.8 m)	16.5 (5.1)	17.0 (5.1)	17.0 (5.1)	17.0 (5.2)	17.5 (5.3)	18.0 (5.4)	18.5 (5.6)	19.0 (5.7)	19.5 (5.9)	20.0 (6.1)	21.0 (6.4)	22.0 (6.6)	22.5 (6.9)
50 ft (15.3 m)	16.5 (5.1)	17.0 (5.1)	17.0 (5.1)	17.0 (5.1)	17.5 (5.3)	17.5 (5.4)	18.0 (5.5)	18.5 (5.7)	19.0 (5.8)	20.0 (6.0)	20.5 (6.3)	21.5 (6.5)	22.0 (6.7)
55 ft (16.8 m)	16.5 (5.1)	17.0 (5.1)	17.0 (5.1)	17.0 (5.2)	17.5 (5.3)	17.5 (5.4)	18.0 (5.5)	18.5 (5.6)	19.0 (5.8)	19.5 (6.0)	20.5 (6.2)	21.0 (6.4)	22.0 (6.6)
60 ft	16.5	17.0	17.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A



Courtesy of FallTech

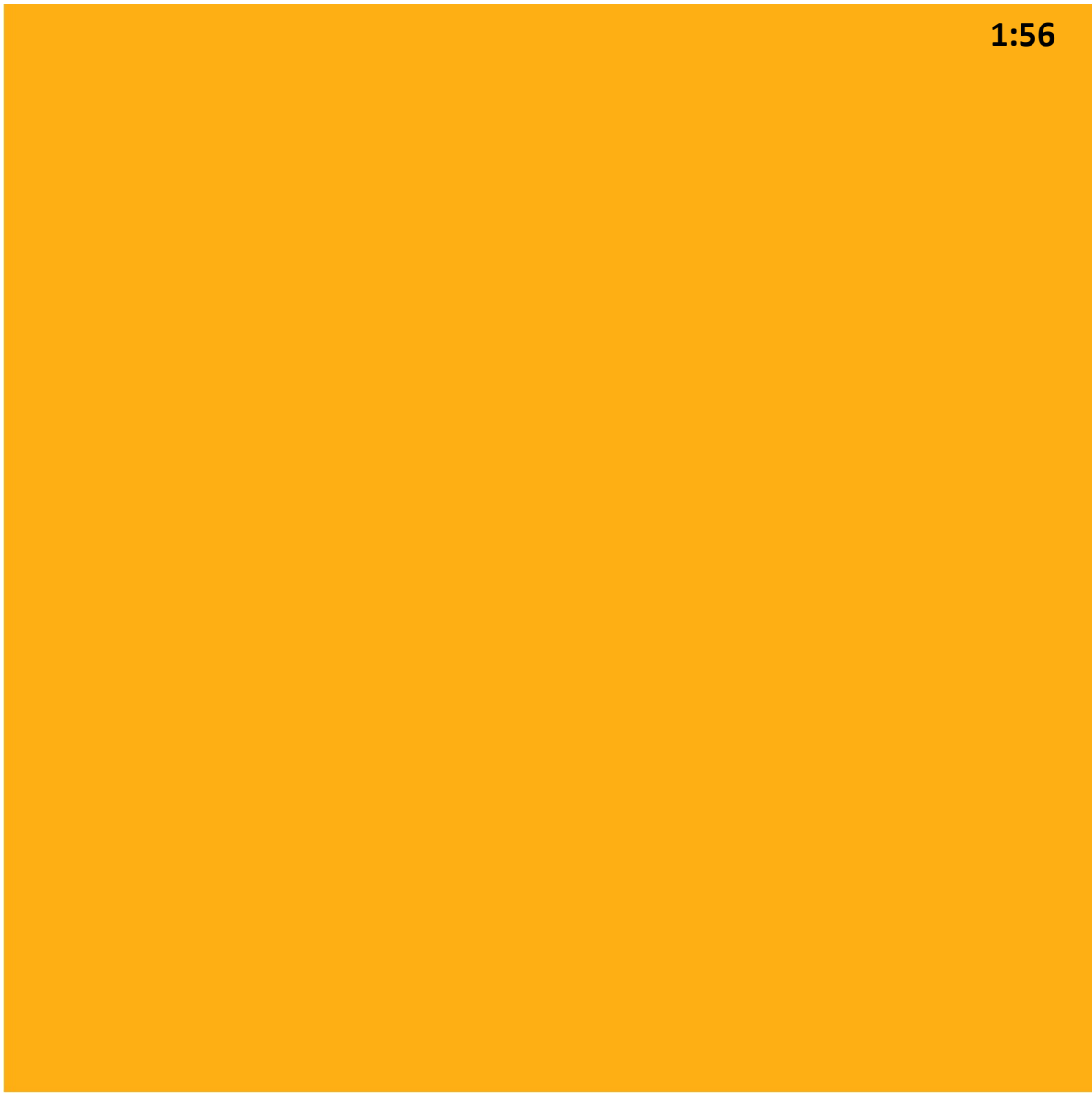
ANSI Z359.14-2021

Do your SRLs/SRDs need to meet the new ANSI Class 1 & Class 2 Standard?

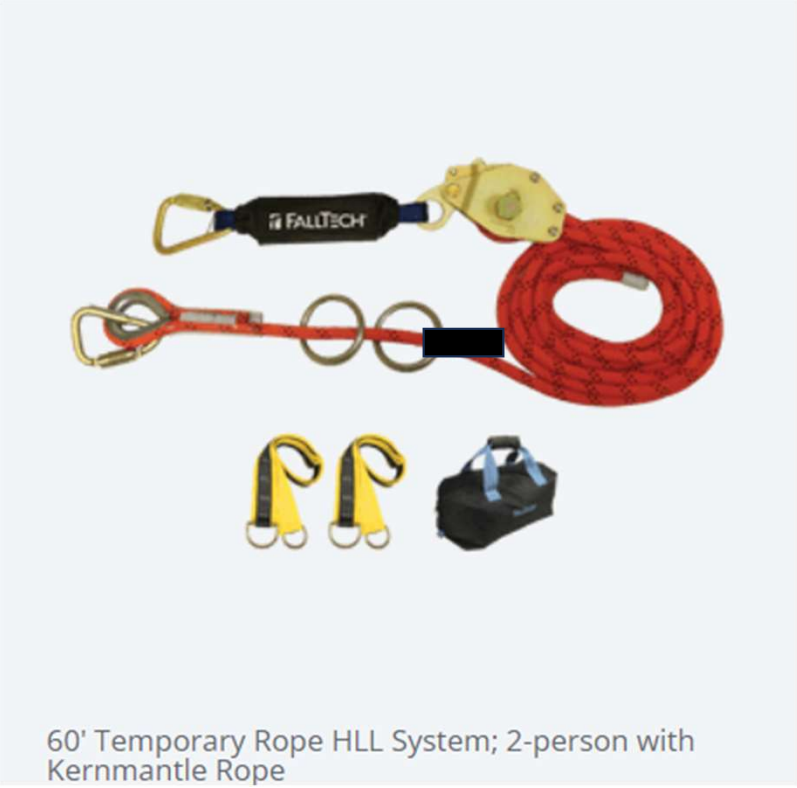
Can you still use your Class A and Class B SRLs/SRDs?

Can my Class A & Class B SRLs/SRDs be certified to the new ANSI Standards?

What does OSHA say?



Horizontal Lifelines



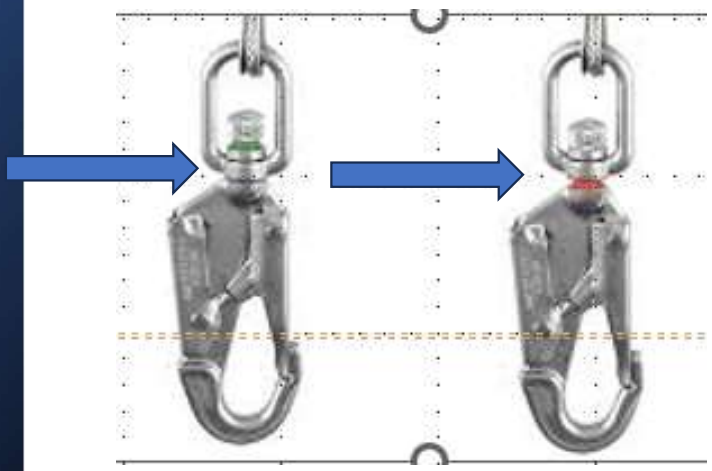
60' Temporary Rope HLL System; 2-person with Kernmantle Rope

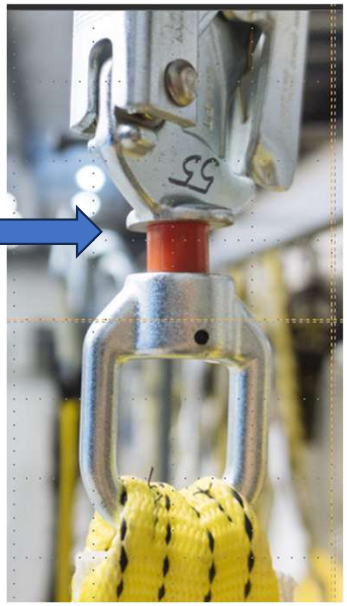
60' 4-Person Temp Rope HLL System

Courtesy of FallTech

Horizontal lifelines **shall be designed, installed, and used, under the supervision of a *qualified person***, as part of a complete personal fall arrest system, which maintains a safety factor of at least two.

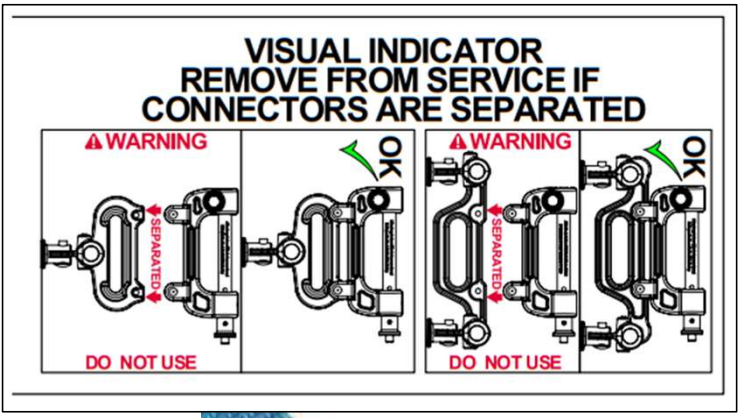
Training
Fall Protection Equipment Fall Impact Indicators

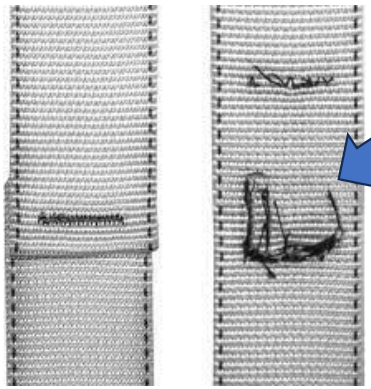




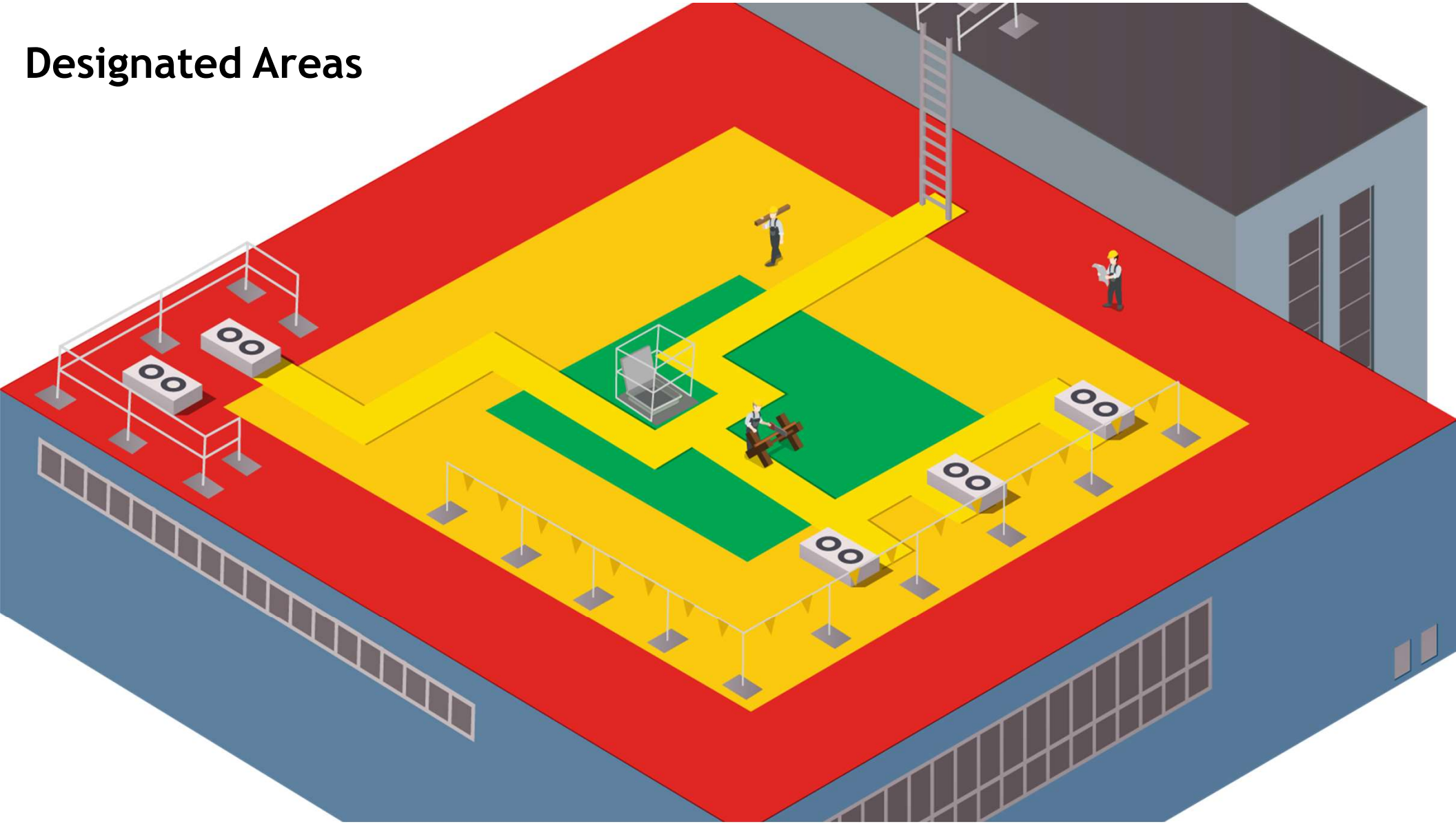
Training

Fall Protection Equipment Fall Impact Indicators





Designated Areas



Designated Area

- A **designated area** may be used on low-slope roofs (also called flat roofs) in two situations.
  - **First**, if the work will be at least 6 feet from the edge (but less than 15 feet), a designated area may be used if the work is both temporary and infrequent.
  - **Second**, if the work will be 15 feet or more from the edge, a designated area may be used. In fact, if employees will be at least 15 feet from the edge and the work is both temporary and infrequent, no fall protection is required (not even a designated area).
- For work within 6 feet of the edge, a designated area cannot be used. Employees must use conventional fall protection like a personal fall arrest system, positioning systems, or guardrails.

Temporary and Infrequent

A key phrase is ***"temporary and infrequent,"*** which is not defined in the OSHA regulation. However, the 2016 preamble to the revised Walking Working Surfaces regulations explained that "temporary" means the task will require no more than an hour or two, and "infrequent" means the need arises only on occasion, such as monthly. In addition, the task should require only one trip to the roof. OSHA gave an example of replacing an AC filter on a roof unit once per month.

Temporary and Infrequent

To summarize, a designated area can be used if:

- The work is at least 15 feet from the edge, no matter how long the job will take; or
- The work is at least 6 feet from the edge and is both temporary and infrequent.

A designated area is not an option (and conventional fall protection is required) if:

- The work is within 6 feet of the edge, or
- The work is within 15 feet of the edge but does not qualify as temporary and infrequent.

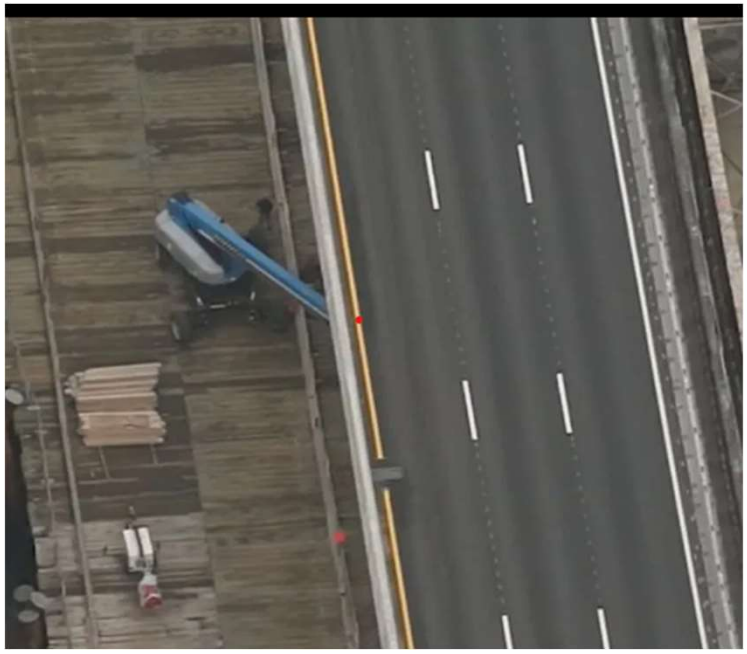
Training Record

Employers must maintain written certification training records for affected employees.

Record must contain at least:

- Topic of training provided.
- Name or other identity of employee trained
- Date(s) of training.
- Name (and signature) of instructor (CP/QP) who provided training.

Fall Case Studies



Two workers in an aerial wearing PFASs ejected. One fatal, one seriously injured (495 Haverhill, MA)

Iron worker connector wearing a PFAS falls off beam 14’-9” from the deck and hits the deck. The GC has a 6-foot rule. Serious face injury (Cambridge, MA)

Fall Case Studies

- All three workers were wearing PFASs, connected.
- One worker in the aerial lift using a web SRL/SRD connected to basket
- Another worker in the aerial lift using a double PEA web lanyard with two rebar snaphooks connected to basket
- Iron worker using a beamer connected to a beam using a double PEA web lanyard with two rebar snaphooks

So, what happened?

Snapho
Allo
Connec
guardr

FALL PROTECTION

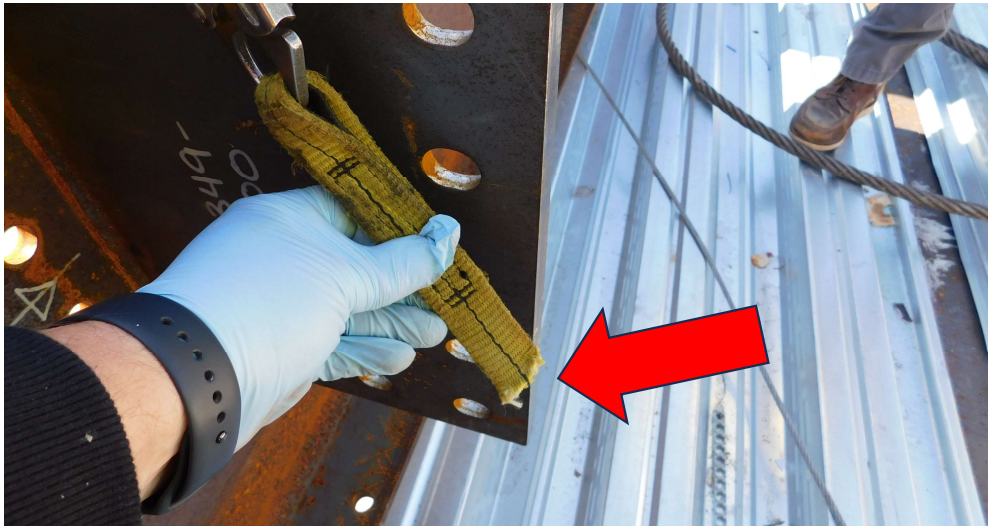
Anchor point
5000 lbs. lbs.?
Guardrail 200 lbs.

1926.502(d)(23)
Personal fall arrest systems shall not be attached to guardrail systems

What Went Wrong

- Large snaphook allowed worker to attach to top rail of the aerial lift basket.
- 18-inch extension created greater freefall, which increases the impact forces. 6-foot lanyard was now a 7.5-foot lanyard, increasing freefall anywhere from 1.5-feet to 3-feet.
- Web lanyard after fall; would it be subject to being cut under tension?
- Web SRD/SRL lanyard after fall; would it be subject to being cut under tension?
- Web SRD/SRL lanyard inspection would have taken it out of service

Iron Worker-Connector Fall




11.4.2020 13:35


Beamer
P6349-6200
11.4.2020 13:08

Iron Worker Connector Fall

- Beam/WWS 14’-9” from deck
- Double Web lanyard connected to beamer at foot level
- While walking, with beamer connected, came to sudden stop at a flange, causing him to fall
- The lanyard, when under tension, went across flange, cutting all the way through the lanyard
- Worker hits deck below face first.
- CFD response, stokes basket by crane to ground

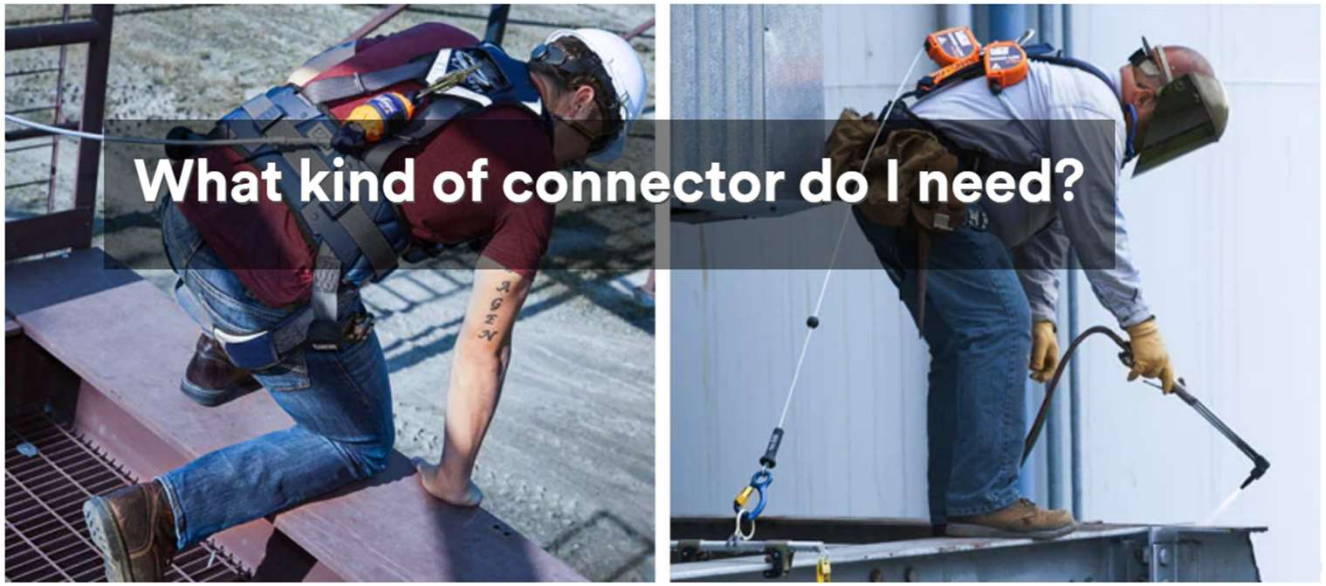
What Went Wrong

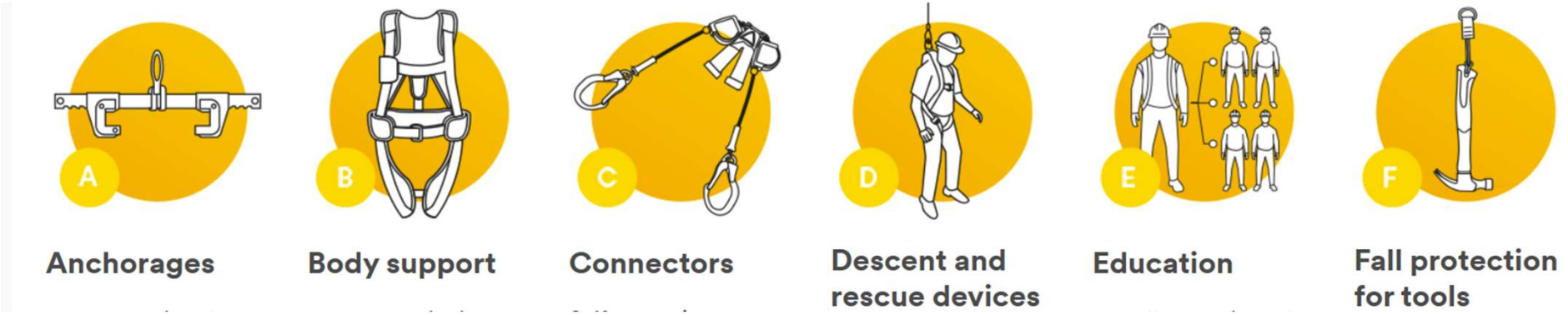
- Fall equipment assessment for the hazard
- Guardian Big Boss model #21302 “Web lanyard tie-off at foot level exposes lanyard to sharp edges”
- Beam/WWS 14’-9” to deck
- Total fall distance calculation from beam

16 ft without a Safety Factor

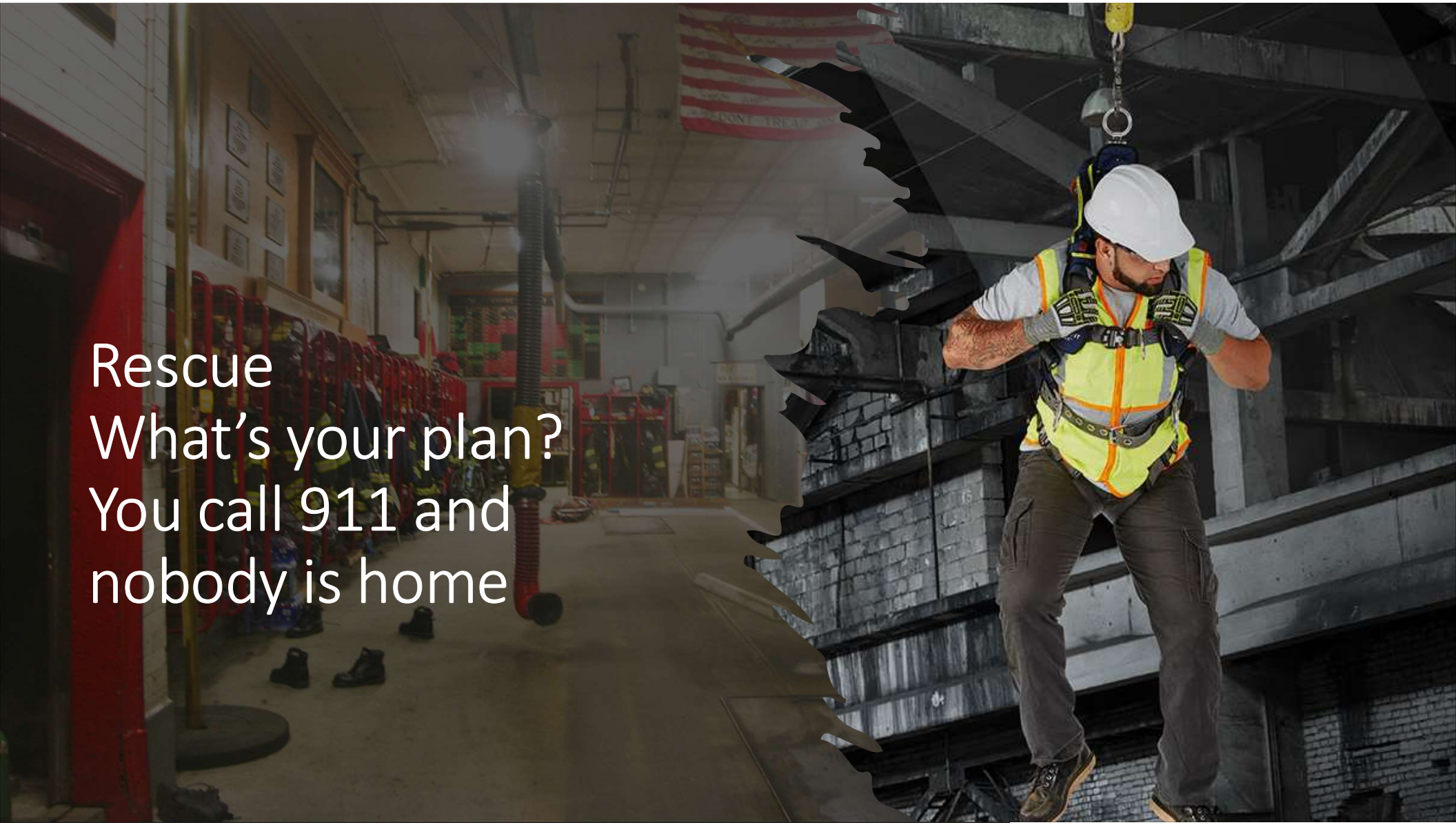
Big Boss Instructions < 310 lbs. total

- 6 ft = Length of Shock Absorbing Lanyard
- 4 ft = PEA Elongation/Deceleration Distance
- 1 ft Harness Stretch
- 5 ft Height of Dorsal D-Ring
- 3 ft Safety Factor
- 19 ft Total Potential Distance





Courtesy of 3M DBI/SALA


Rescue
What's your plan?
You call 911 and
nobody is home


CLIMB
HIGHER

Personal Safety Division

2:34

Your Call to Action

- Evaluate, select and purchase your FP equipment based on needs/fall hazards & distance, rescue, etc.
- Evaluate or reevaluate your current FP training programs
- Create your own criteria for your internal fall protection training or training providers
- Determine who in your organization needs each level of FP training
  - User/Authorized Person, Competent Person, Qualified Person, Supers, Foremen, PMs, Safety Personnel, Train-the-Trainers, etc.

Transfer of Training: Using Knowledge and Skills in the Field

One of the most important measures of the effectiveness of training is the degree that someone can carry the knowledge and skills from the classroom out into the field and put them to use.

OSHA's Fall Prevention Campaign

https://www.osha.gov/stop-falls-stand-down