ABCD's of Fall Protection

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HAS ANYONE EVER HAD A FALL?


SAFETY


Tyvek
HomeWrap
Tyvek
HomeWrap
Tyvek
HomeWrap
Tyvek
HomeWrap


EARL OF PORTLAND

FallTech Manufacturing

EXECUTIVE SUMMARY

- An industry leader in the manufacturing of:
  - Personal fall arrest equipment
  - Confined space rescue/retrieval equipment
  - Permanent engineered horizontal life line system
- Satellite warehouses
  - Houston, Texas
  - West Virgina
- Self retracting lifeline recertification cente
  - Buffalo, New York
  - Broussard, Louisiana
  - Portland, Oregon
  - Phoenix, Arizona
  - Houston, Texas

FallTech Manufacturing

- Founded in 1992 by Michael Dancyger
- 53,000 Sq. Ft. Manufacturing Facility in Compton, CA
- Approximately 150 Employees
- 85 % of products manufactured domestically
- Diligent global sourcing to maintain competitiveness
- ISO 9001-2008
- Certified ISO Testing Lab

Quality Management
Testing and Compliance

- ***Testing-***
- **All FallTech Finished Goods are tested in-house as well as 3rd party tested according to established ANSI Standards**
- **All Raw Materials used in the construction of FallTech Products are tested upon arrival**
- **Additionally, many Raw Materials are tested to conform to our specifications when they are intended to exceed the ANSI Standards.**

ABCD’s of Fall Protection

- A – Anchor Point
- B – Body Support Device
- C – Connecting Means
- D – Device

How far will you fall in:

1 Second?

3 Seconds?

Why Fall Protection?

Seconds	Feet
1.0	16
1.5	36
2.0	64
2.5	100
3.0	144

“Don’t let that be the last three seconds of your life”


WARNING

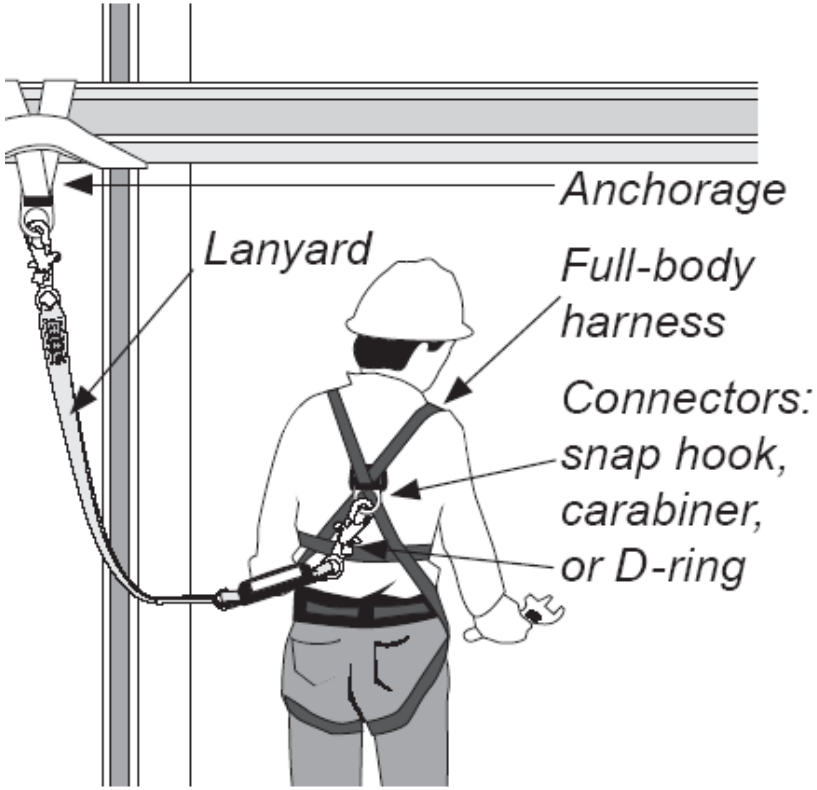
Equipment Limitations

- Total working load for fall protection components being used is 310 lbs. This includes workers body weight, clothes, tools, etc.

- Fall protection system must be rigged so that the workers free fall distance does not exceed 6 ft before their personal fall arrest system starts to deploy.(some exceptions will be discussed).

Anchorages

- Secure means of attachment for fall arrest system.
- Anchorage connector. Unless an existing anchorage has been designed to accept a lanyard or lifeline, you'll need to attach an anchorage connector — a device that provides a secure attachment point.
- The anchorage can be used only as the attachment point for a personal fall-arrest system; it can't be used to support or suspend platforms.



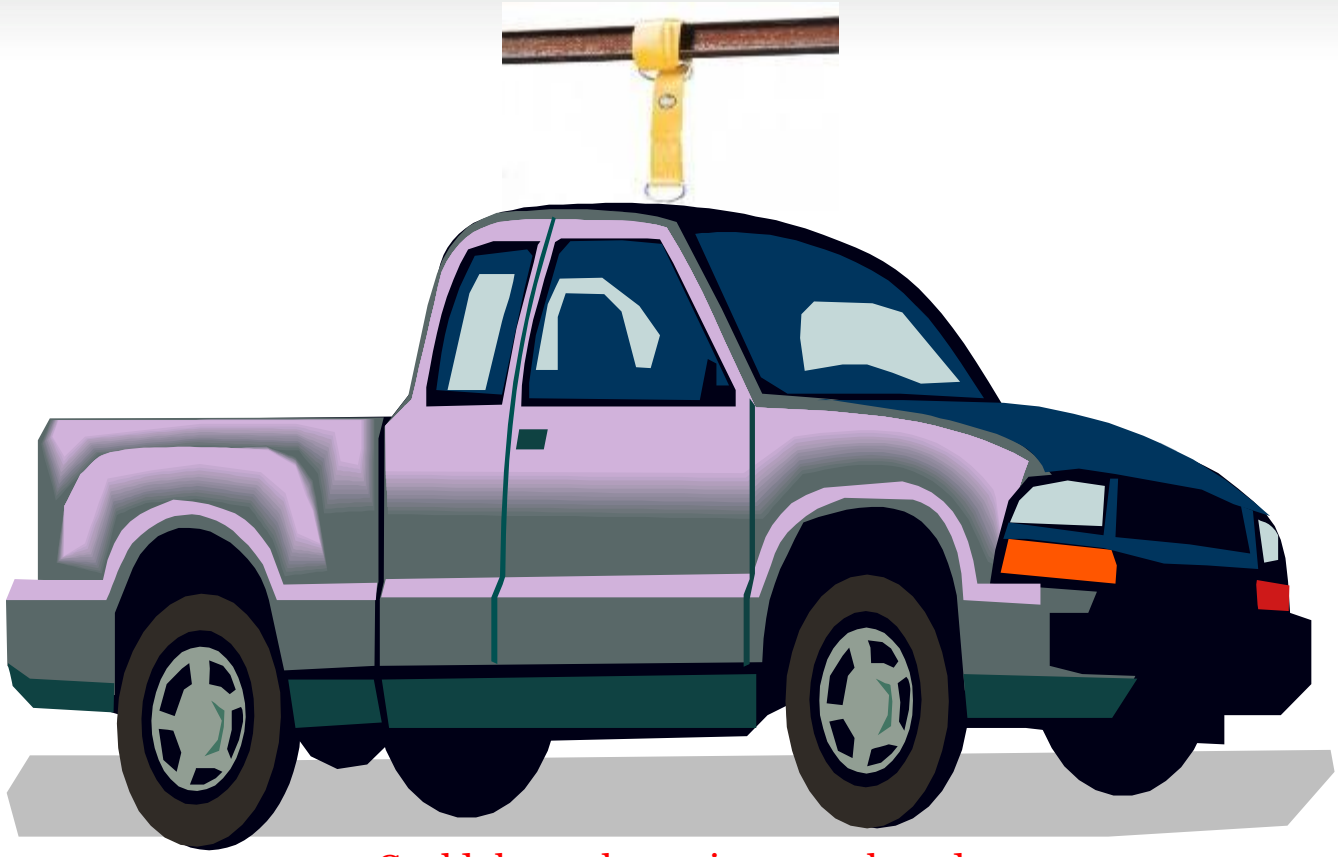
Anchorages

- As with any part of the fall arrest system, the user must inspect their anchor(s) before each use.
- The anchor should be capable of withstanding 5000 Lbs. or maintain 2 to 1 safety factor per employee attached.
- A single 5000 lb. anchor is rated for only one employee
- Location. The user should always try to anchor at chest height or higher.
- If the anchorage is located overhead, try to keep it directly overhead to prevent a swing fall.

Anchorages

- Inspection
  - Web Anchors, look for the following. Tears in the webbing, holes, loose stitching, wear, paint, major discoloration
  - D Rings, look for the following. Bends, cracks, major discoloration

Anchorages



Could the anchor point you selected hold the weight of a pickup truck? If not, it is probably not a good anchor to use.

7336

- The Pass-Thru anchor is the most used anchor.
- Inspect by looking at the webbing to make sure there are no tears, holes or major discoloration. Check the stitching to make sure there are no loose stitches and make sure the D rings are not bent, cracked or has any major discoloration.
- Heavy duty 1 ¾” polyester webbing
- 3” wear pad
- Economical and lightweight
- 5000 lb rating
- Meets OSHA and ANSI requirements

7410

- Re-Usable roof anchor
- Inspect by making sure the D Ring is not bent or cracked and no major bends or cracks in the mounting plates
- Economical and can be used repeatedly
- Holes are clearly marked for use with nails or screws
- Can be mounted to roof peaks or on flat roofs
- 5000 lb rating
- Meets OSHA and ANSI requirements

7531

- Gliding beam anchor
- Inspect
- Durable alloy-steel jaws with nylon wear pads
- Single “ratchet jaw”
- Lightweight aluminum ratchet bar
- Fits beams from 3 ½” to 14” in width and up to 1 ¼” thickness
- 5000 lb rating
- Meets OSHA and ANSI requirements

Body Wear

- The full-body harness has straps that distribute the impact of a fall over the thighs, waist, chest, shoulders, and pelvis.
- The harness must be made from synthetic fibers.
- Use only industrial full-body harnesses (not recreational climbing harnesses).
- It should meet ANSI standards

Variations of Harnesses

- FallTech harnesses are rated at 425 lbs
- Single D, and 3 D are your most common, but also available in 4 D and 5 D. (Note: Only back dorsal D is used for fall arrest.
- Chest strap and leg buckles are typically Grommet, Mating or Quick Connect
- Torso will normally be adjusted by either a mating buckle or friction adjuster.

Full Body Harness 3-Point vs 5 Point Adjustability

- 3-Point – Only allows for size adjustment in the chest and each leg. Price point harness.

- 5-Point – Allows for full adjustability in the chest, each leg and each torso. Most preferred in the industry.

Harnesses

- Inspection
  - Look for tears in the webbing, holes, loose stitching, wear, paint, major discoloration
  - Fall Tab Indicators
  - D Rings, look for the following. Bends, cracks, major discoloration
  - Grommets, make sure there are no gaps between the grommet and fabric.

Donning A Full Body Harness

- Work the harness from the bottom to the top.
- Ensure “sub-pelvic” strap is positioned just below the buttocks.
- Leg closures should be tensioned snug…not too tight and not too loose. If too tight, may cut off circulation. If too loose, may cause sever damage to the groin area.
- Chest Strap should be worn at or just above the breast line. If worn below the breast line, it might impede breathing while waiting for rescue.
- Chest strap should be worn just short of snug. Purpose is to keep the shoulder straps in place in the event of a head first drop.

Contractor+

7015B

1 Back D-ring; Mating Buckle Legs and Chest.

7018B

3 D-rings, Back and Side; Tongue Buckle Legs and Mating Buckle Chest.

1 Back D-ring; Tongue Buckle Legs and Mating Buckle Chest.

7017B

3 D-rings, Back and Side; Mating Buckle Legs and Chest.

7073BL

3 D-rings, Back and Side; Tongue Buckle Legs and Mating Buckle Chest; Durable 4" Waist and 7" Shoulder Pads.

Tradesman+

7078BLX

3 D-rings, Back and Side; Tongue Buckle Legs and QC Chest; Durable 6" Waist and 10" Shoulder Pads.

7006B

1 Back D-ring; Mating Buckle Legs and Chest; Tri-layer air mesh shoulder yoke

7008B

1 Back D-ring; Tongue Buckle Legs and Mating Buckle Chest; Tri-layer air mesh shoulder yoke

7009B

3 D-rings, Back and Side; Mating Buckle Legs and Chest; Tri-layer air mesh shoulder yoke

7010B

3 D-rings, Back and Side; Tongue Buckle Legs and Mating Buckle Chest; Tri-layer air mesh shoulder yoke

Journeyman Flex

7035B

3 D-rings, Back and Side; Tongue Buckle Legs and Quick Connect Chest; Premium Padded Shoulder Yoke, Legs and Waist

7035BQC

3 D-rings, Back and Side; Quick Connect Legs and Chest; Premium Padded Shoulder Yoke, Legs and Waist

7021B

1 Back D-ring; Tongue Buckle Legs and Quick Connect Chest; Premium Padded Shoulder Yoke and Legs

7021BQC

1 Back D-ring; Quick Connect Legs and Chest; Aluminum Components; Premium Padded Shoulder Yoke and Legs

7021BFD

2 D-rings, Back and Front; Tongue Buckle Legs and Quick Connect Chest; Aluminum Components; Premium Padded Shoulder Yoke and Legs

7023B

3 D-rings, Back and Side; Tongue Buckle Legs and Quick Connect Chest; Premium Padded Shoulder Yoke and Legs

Harness Lanyard Keepers

- Most manufacturers now offer lanyard keepers with harnesses so as to provide workers with a secure method of stowing their lanyard when not in a fall hazard situation.
- Shock absorbing lanyards must still hold a 5,000lb load when fully deployed. Employee needs to minimize the chance of their life line getting snagged by a piece of equipment.

View Pack Lanyards

- View pack lanyards allow for greater user inspection of the shock absorbing component vs those shock packs that are “covered”. Loom type shock material deploys. Hard pack is sometimes cumbersome and bulky for the worker

Lanyards

- Inspection
  - In the webbing, look for tears, holes, loose stitching, wear, paint, major discoloration
  - On Internal SAL look for the words being exposed
  - Hooks, look for the following. Bends, cracks, major discoloration. Also make sure the hook will close by itself.

Internal Shock Absorbing Lanyards 8259 and 82593

- Single Leg
- Internal shock packs provide more “free webbing” making the lanyard more user friendly. Most popular shock pack in the industry.
- Fall Indicator in webbing.

Stretch Lanyards 8240 and 8240Y3

- Single leg 8240
- “Y” leg 824Y3 (also called 100% tie off)
- Lanyard automatically adjusts from 4.5 to 6ft depending on the mobility needed by the worker.
- Expands and contracts with workers natural body movement.

Adjustable Lanyards

- At times a worker may want to limit their mobility from their anchor point or may need to hook below the height of their harness d-ring in order not to exceed a 6ft free fall.
- Incorporates a buckle for adjustability.

Heavyweight Shock Lanyards

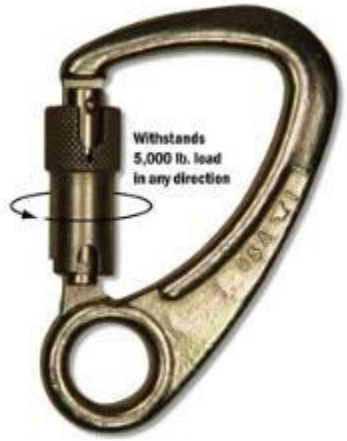
- 6’ Shock Absorbing lanyard is a high-capacity connecting device designed to accommodate individuals from 300 – 400 lbs. while keeping the arrest forces below OSHA limits.
- Special Internal Shock Absorbers limit arresting forces to 1,500lbs. or less.

Specialty 12ft Fee Fall Shock Lanyards

- 6’ Shock Absorbing lanyard is designed to be used for extended free-fall, when overhead anchorages are unavailable and will keep arresting forces within OSHA limits in free-falls up to 12’
- Special Internal Shock Absorber limits arresting forces to 1,500lbs. or less.
- Optional 5,000lb gate carabiner eliminates the possibility of roll-out when tied off at the feet!

WrapTech or Tie-Back Shock Absorbing Lanyards

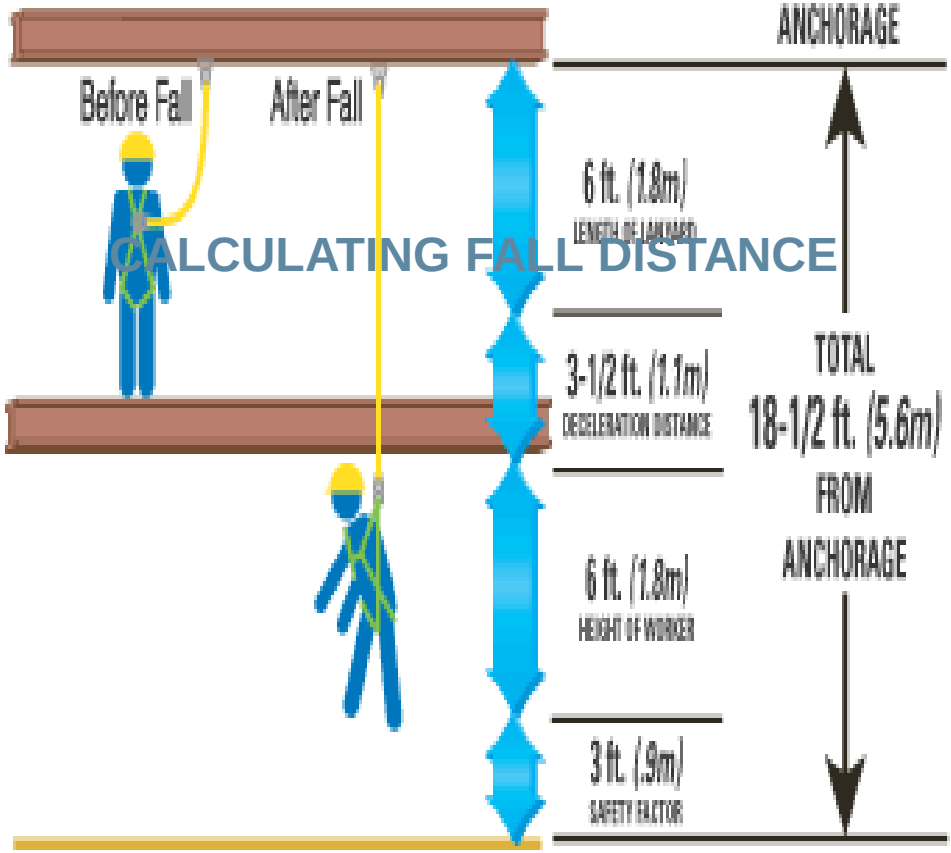
- 6’ Shock Absorbing lanyard features single-leg construction and a carabiner with a reinforced gate which is designed to withstand a 5,000 lb load in any direction.
- This allows the lanyard to be used in tie-back applications where the lanyard is wrapped around a structural member and connected to itself as an anchorage alternative.
- These exceptions are allowed under OSHA 1926.502(d)(6)(i). WrapTech lanyards also feature jacketed web for extra protection from wear as well as our forged Offset snap hook at the attachment end.



Work Positioning Life Lines

- Work positioning life lines are never suppose to be subjected to free fall forces.
- They are designed to prevent a worker (restraint) from accessing an exposed leading edge or designed to support a worker as they work with their hands at elevations such as on wall forms during rebar tie.

CALCULATING FALL DISTANCE



Self Retracting Devices

- Self-Retracting Devices are designed to provide the highest level of safety possible in the event of a fall.
- SRD's automatically extend and retract as a worker maneuvers in your work position. In the event of a fall, they are designed to arrest the fall in under two feet and to dissipate the forces to a level that meets OSHA limits.
- SRD's work quickly, smoothly and automatically to ensure that a fall is arrested and to minimize the injuries typically attributed to clear-fall hazards.
- Not only are SRD's more durable and longer lasting than traditional lanyards, most of them are fully serviceable
- Stress indicator can commonly be found at the hook denoted by a red band or as a deployed box stitch on webbing.

SRD's

- Inspection
  - If it is web, pull all of it out of the housing letting it go back in slowly. Make sure there are no tears, or that it's not worn too much.
  - If it is cable, pull all of it out of the housing letting it go back in slowly. Make sure there are no loose strands. Please use gloves when handling the cable.
  - Check to make sure there are no indicators exposed. Could be above the connector or exposed tabs.
  - Make sure the snap hooks completely close by themselves.
  - Make sure it will stop by pulling quickly on the web or cable

727630

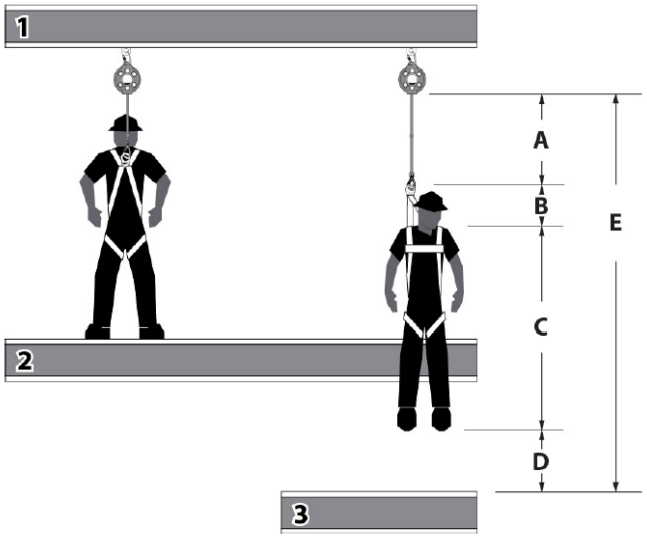
- Rugged construction for superior wear and reliability.
- 3/16” galvanized steel cable rated at 4,000 lbs.
- Load indicating swivel carabiner. All connecting hardware meets ANSI Z359.1 2007
- Maximum arrest forces under 900 lbs and deceleration distances under 36”.
- Meets OSHA and ANSI requirments

7276WR

- Over-molded steel frame provides superior durability and light weight
- Dyneema webbing has high strength and superior resistance to cuts and abrasions
- Load-indicating swivel carabiner and connecting carabiner with 3600 lb gate strength
- MAF under 750 lb and deceleration distance under 30”
- Meets OSHA and ANSI requirements
- Weighs 4 lbs

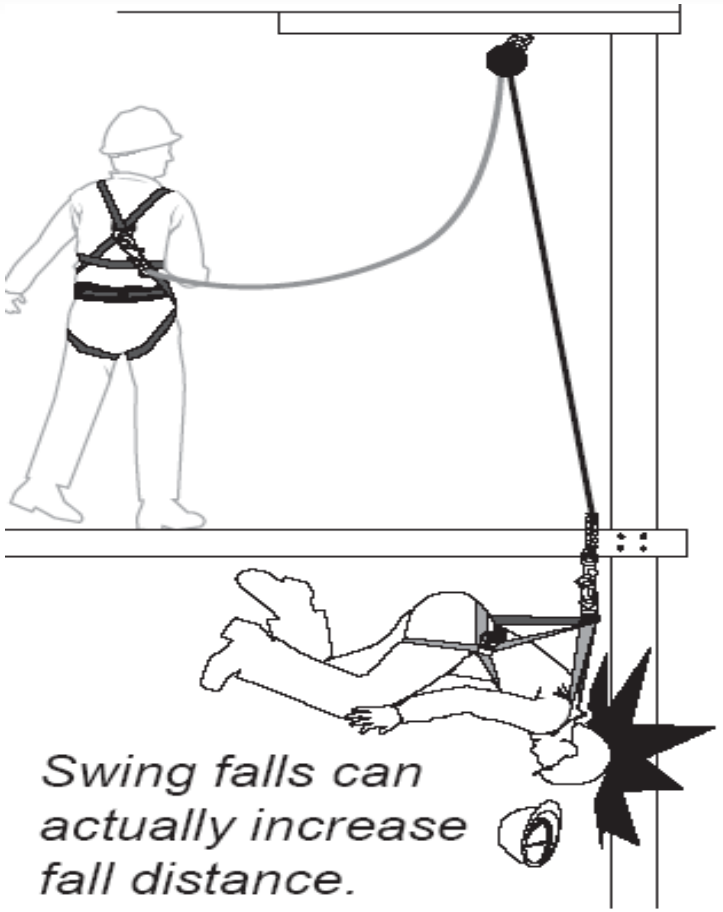
Deceleration Devices

- Shock Absorbing Lanyards:
  - Must be attached at D-ring height or higher
  - Will elongate 42”
  - Must consider “Clear Fall” requirements
  - Never use a shock-absorbing lanyard if the shock absorber is even partially extended or if the lanyard has arrested a fall.
- Example:
  - Lanyard length (6 feet) + deceleration distance (3.5 feet) + worker’s height (6 feet)+ safety margin (3 feet) = 18.5 vertical feet from anchorage to lower level.



Deceleration Devices

- Self-Retracting Lifelines
  - Must be anchored overhead
  - Generally will engage within 12” and arrest within 36” ANSI requires 54” Arrest
  - Must consider swing fall hazards



Mini DuraTech® Compact SRD

new

Attachment from overhead to 5' below the dorsal D-ring

- Swivel-eye for reduced lifeline leg twisting
- Durable compact and impact resistant nylon housing
  - Screws vs. clips in competition
- Internal Oscillating pawls provide quick and positive stopping action
- Integral Shock absorber provides deceleration and indication of a fall
- Abrasion resistant Dyneema lifeline webbing provides longer service life
  - 7,000 tensile/5,000 after abrasion test
  - Competition 4,700/3,200 after test
  - Standard minimum is 4,200 in .11
  - No abrasion testing in .14 for SRD's

Mini DuraTech® Compact SRD

new

Attachment from overhead to 5' below the dorsal D-ring

- Light weight - as low as 1.7 lbs
- Typical arrest distances as low as 26"
- 310 lb Max. User Weight Capacity
- Meets ANSI Z359.14-2012 Class B
- Meets OSHA 1926.502 Regulations

Mini WrapTech ® Compact SRD

new

Combines the benefits of the DuraTech Mini SRD with a 3’ jacketed web and carabiner - eliminating the need for a separate anchor connector.

- Anchorage capacity of up to 11”
  - Greatest tie-back anchorage connection range available
- Attachment from overhead to 5’ below the dorsal d-ring
- Typical arrest distances as low as 25"
- 310 lb Max. User Weight Capacity
- Meets OSHA Regulations
- Does NOT meet ANSI Z359 due to more than 2’ of webbing outside housing

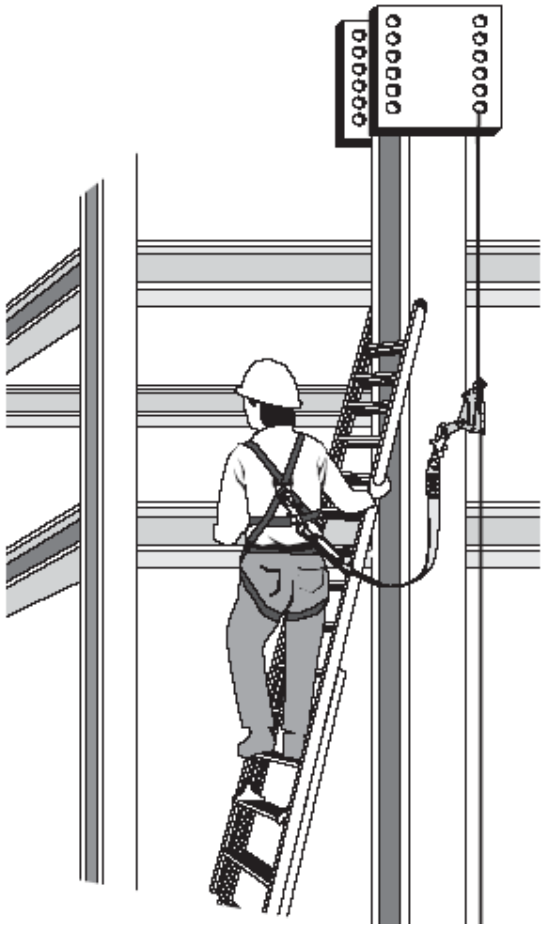
Mini WrapTech® Compact SRD

new

- Versatile 9' working length
- Durable compact and impact resistant nylon housing
- Leg-end WrapTech® Carabiner with 5,000 lb gate strength ensures secure Tie-back connection
- Abrasion resistant jacketed tie-off leg provides longer life
- Integral Shock absorber provides deceleration and indication of a fall event

Rope Grabs & Vertical Lifelines

- Rope grab. A rope grab allows a worker to move up a vertical lifeline but automatically engages and locks on the lifeline if the worker falls. When using a rope grab, keep the following in mind.
  - The rope grab must be compatible with the lifeline.
  - The rope grab must be correctly attached to the lifeline (not upside down).
  - Keep the lanyard (between the rope grab and the body harness) as short as possible.
  - Keep the rope grab as high as possible on the lifeline.



Rope Grabs

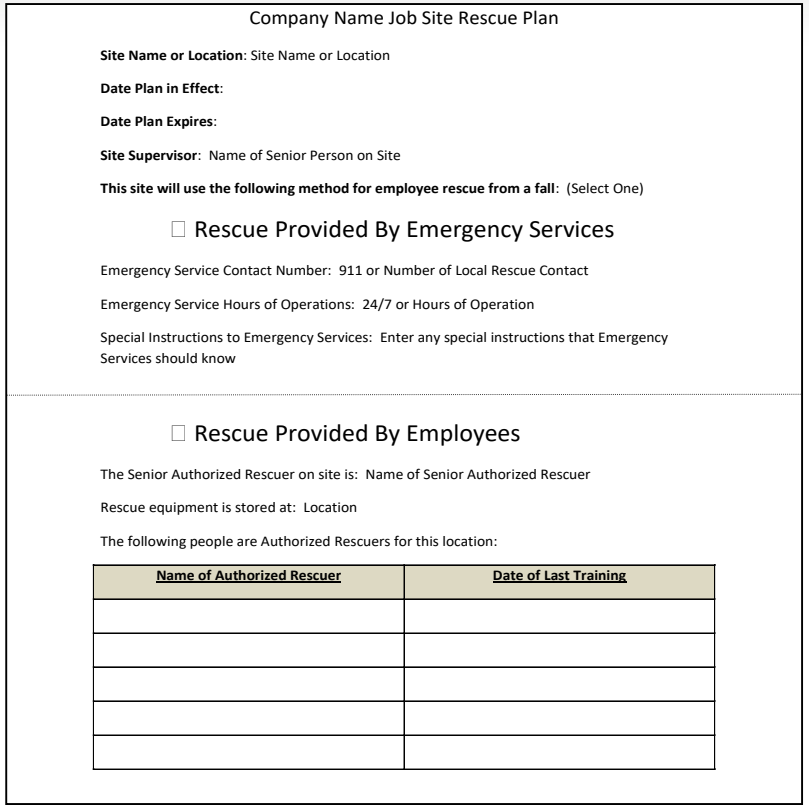
- Allow the user to move freely up and down the vertical lifeline while providing fall protection. These grabs are designed to react to a fall by locking on the lifeline and to begin the deceleration process when attached to 1 3' shock absorbing lanyard.

Rescue

- Before on-site work begins
  - Identify emergencies that could affect your work site.
  - Establish a chain of command.
  - Document procedures for responding to emergencies and make sure they're available at the site.
  - Identify critical resources and rescue equipment.
  - Train on-site responders.
  - Identify off-site responders and inform them about any conditions at the site that may hinder a rescue effort.
  - Make sure responders have quick access to rescue and retrieval equipment, such as lifts
  - and ladders.

Rescue Plan

- "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."
- Ever job site must have a rescue plan.
- If the employer relies on emergency services, they must ensure that:
  - They can arrive quickly.
  - They are trained and have the equipment to perform rescue.



Company Name Job Site Rescue Plan

Site Name or Location: Site Name or Location

Date Plan in Effect:

Date Plan Expires:

Site Supervisor: Name of Senior Person on Site

This site will use the following method for employee rescue from a fall: (Select One)

☐ Rescue Provided By Emergency Services

Emergency Service Contact Number: 911 or Number of Local Rescue Contact

Emergency Service Hours of Operations: 24/7 or Hours of Operation

Special Instructions to Emergency Services: Enter any special instructions that Emergency Services should know

☐ Rescue Provided By Employees

The Senior Authorized Rescuer on site is: Name of Senior Authorized Rescuer

Rescue equipment is stored at: Location

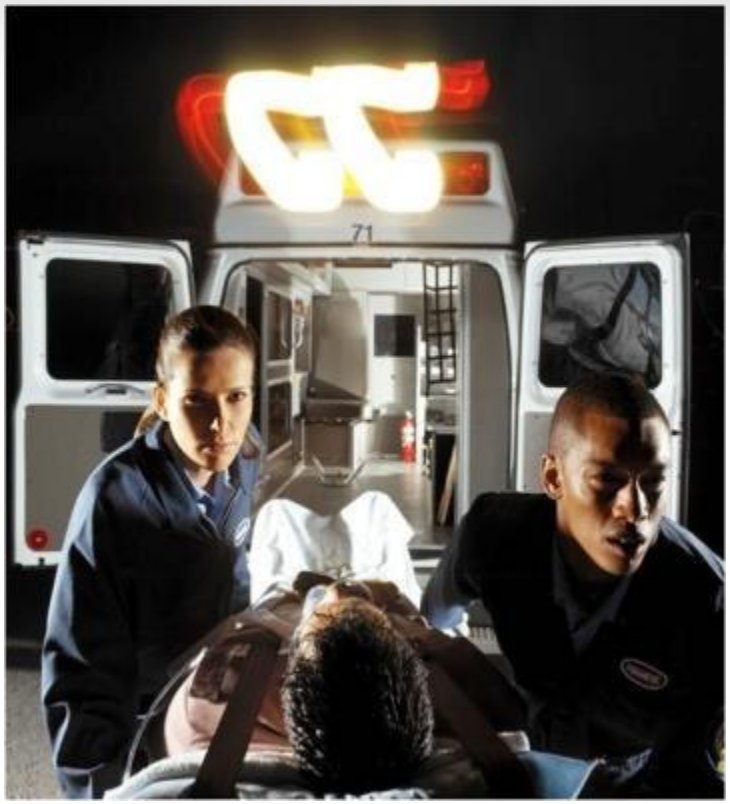
The following people are Authorized Rescuers for this location:

Name of Authorized Rescuer	Date of Last Training

It is important that every job site has a rescue plan specific to that location.

Emergency Services Rescue

- In order to rely on emergency services for rescue, you should ensure they:
  - Can reach the location of the worker in a timely manner. (15 minutes or less)
  - Must be on duty the entire time work is being performed.
  - Must have the equipment and training required to reach the worker.
  - Have backup capacity to respond in the event another emergency is occurring.
  - Are informed of the hazards of suspension trauma.



Always check with emergency services before deciding to rely on them for rescue

Employee Trained Rescue

- If the company relies on employees to perform rescue, they should:
  - Designate an experienced Competent Rescuer who is an individual designated by the employer who, by training, knowledge and experience is capable of the implementation, supervision and monitoring of the employer's fall protection rescue program.
  - Designate Authorized Rescuers who have been trained by a Competent Rescuer on rescue equipment and procedures.

Authorized Rescuers should be listed on the job site Rescue Plan

Suspension Trauma

- Suspension trauma is caused when blood collects in the legs as a result of prolonged suspension.
- Suspension trauma can cause unconsciousness and even death.
- Symptoms include:
  - Faintness
  - Nausea
  - Dizziness
  - Graying or loss of vision
  - Unconsciousness

Suspension Trauma is a serious hazard.

Questions?

- We're here to help

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