KwikSafety
Everything Safety®

INSTRUCTIONS FOR USE

BOA SINGLE LEG SAFETY LANYARD W/ EXTERNAL SHOCK ABSORBER MODEL NO. KS7701

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⚠ WARNING

This manual must be read and understood in its entirety and used as part of fall protection training program as required by OSHA or any state regularity agency. These instructions are intended to meet the manufacturer instructions as required by ANSI/ASSE Z359.13-2013. The user must fully understand proper equipment use and limitations.

Do not skip this instruction manual. Read the instruction manual carefully before using the equipment. If failed in doing so it may cause serious injury or Death.

WARNING!

- **This product is part of a personal fall arrest, restraint, work positioning, suspension, or rescue system. A Personal Fall Arrest System (PFAS) is typically composed of an anchorage and a Full Body Harness (FBH), with a connecting device, i.e., a Shock Absorbing Lanyard (SAL), or a Self-Retracting Device (SRD), attached to the dorsal D-Ring of the FBH. These instructions must be provided to the user of this equipment.**
- **Do NOT use the lanyards or positioning lanyards for material handling.**
- **Use caution when using components or subsystems, or both, which may affect or interfere with the safe function of each other.**
- **The need to make only compatible connection and limitations of compatibility.**
- **Alterations or misuse of this product, or failure to follow instructions, may result in serious injury or death.**
- **Proceed with caution when wxposing the product to chemicals which may produce a harmful effect. Consult with the manufacturer in cases of doubt.**
- **Use a proper method of coupling the connector and checking that it is closed and locked.**
- **Do not alter or intentionally misuse this equipment. Consult KwikSafety when using this equipment in combination with components or subsystems other than those described in this manual. Some subsystem and component combinations may interfere with the operation of this equipment. Proceed with caution when using this equipment near moving machinery, electrical hazards, chemical hazards, and sharp edges.**
- **The user must read and understand the manufacturer's instructions and labels for each component or part of the complete system. Manufacturer's instructions and labels must be followed for proper use, care, and maintenance of this product. These instructions must be retained and be kept available for the user's reference at all times. Do not remove or alter labels.**
- **A Fall Protection Plan must be on file and available for review by all users. It is the responsibility of the user and the purchaser of this equipment to assure that users of this equipment are properly trained in its use, maintenance, and storage.**
- **Training must be repeated at regular intervals. Training must not subject the trainee to fall hazards. When this equipment is in use the employer must have a rescue plan and the means at hand to implement it and communicate that plan to users, authorized persons, and rescuers.**
- **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.**

DESCRIPTION

KwikSafety Restraint Lanyards are composed of various lengths of polyester webbing, polyester rope, or wire rope, with self-closing/self-locking active connectors at the ends. The anchorage end of the lanyards are equipped with snap hooks, and the attachment end may be a snap hook or a rebar hook. KwikSafety lanyards are ANSI Z359.13 compliant and meet all OSHA regulations.

USE AND LIMITATIONS

This section deals with the general use and limitations of the KwikSafety Shock-Absorbing Lanyards (SALs). Please read this section and all sections of the manual thoroughly. If your application is not addressed, or if you have questions regarding your specific needs, please contact KwikSafety immediately for additional guidance.

1. APPROVED APPLICATIONS

Below are applications for which all KwikSafety Shock-Absorbing Lanyards are specifically suited. This list is not all-inclusive, but is intended to anticipate the most common applications in which this product may be used. If you have questions about whether this product is suitable for your particular application, please consult a competent person or contact KwikSafety for further advice.

Direct Overhead Applications: All KwikSafety's SALs are suitable for use in any application where the properly rated anchorage is directly above the walking/working surface, and allows for a maximum Free-Fall Distance of 6 feet.

Horizontal Lifelines: All KwikSafety's SALs are suitable for use in any application where a horizontal lifeline has been installed under the guidance of a qualified person, and where the Free-Fall Distance does not exceed 6 feet.

Residential Construction: All KwikSafety's SALs are suitable for use in residential construction applications provided the anchorage meets the basic requirements .

General Construction: This product is suitable for use in general construction applications provided the anchorage meets the basic requirements, Free-Fall does not exceed 6 feet, and there is no exposure to a sharp leading edge.

General Industrial Use: This product is suitable for use in general

industrial applications provided the anchorage meets the basic requirements and provided that it is not exposed to sharp edges, electrical hazards or prolonged exposure to highly corrosive environments or substances.

If you have any questions regarding the suitability of this product for your specific application, please consult with a competent person or contact KwikSafety before using. Misuse of this product may result in serious injury or death.

2. RESTRICTED APPLICATIONS

Harsh Chemical Environments: Acids and other caustic chemicals can cause damage to this SAL and its components. Damage from chemical exposure can be difficult to detect and KwikSafety recommends frequent replacement.

Arborist Applications: This product should never be used in arborist applications or tree-trimming applications.

Residential Roofing: This product is not suitable for use in residential roofing applications. KwikSafety recommends the use of a vertical lifeline/rope grab system or a self-retracting lifeline for this application.

Climbing/Fixed Ladders: This product is not suitable for use on fixed ladders or in conjunction with fixed ladder equipment, unless it is being used as back-up fall arrest for a work positioning application. SAL's should only be attached to the back d-ring of your full body harness.

Heavyweight: Most KwikSafety SALs are rated for a maximum capacity of 310 lbs (user, clothing, tools and equipment). Products are available for users requiring a higher capacity. Be sure to check the product label for the capacity of your specific product.

Extended Free Falls: Most KwikSafety SALs are rated for a maximum free fall of 6 feet. In applications where free falls cannot be limited to 6 feet, special products are required.

Power Transmission: Most KwikSafety SALs are manufactured using polyester webbings which are not well-suited for withstanding the punishment of high heat and/or electrical arc hazards.

3. INSTRUCTIONS FOR USE BY TYPE

Before using any Shock-Absorbing Lanyard, read and understand instruc-

tions, warnings and labels for each component of your PFAS and inspect each component, including this SAL, prior to use and in accordance with manufacturer's instructions. Don and properly adjust your Full Body Harness.

Select the appropriate Shock Absorbing Lanyard for your application, based on the conditions on your job-site and the specific fall hazards that you will encounter. If you are unsure as to which SAL or SAL s may be correct for your application or applications, seek the assistance of a competent person or contact KwikSafety for assistance.

Warning: Shock Absorbing Lanyards should only be attached to the back D-ring of your Full Body Harness. Never attach an SAL to side or hip D-rings, shoulder D-rings or to front or chest D-rings. This may result in serious injury or death.

1. Attach the SAL to the back D-ring of your Full Body Harness by depressing the keeper and opening the gate on the double-locking snap hook at the attachment end. Connect the hook to the D-ring and release the gate and keeper. Ensure the gate closes and locks and that the D-ring is fully engaged by the snap hook.

2. Attach the Anchorage-End Connector of your SAL to one of the lanyard keepers on either end of the chest strap of your Full Body Harness. Never attach the Anchorage-End Connector to any other point on your Full Body Harness: Serious injury or death could result.

3. Proceed to your work location. If you are working in the vicinity of a fall hazard, calculate possible swing fall hazards, total fall distance, and required clearance distance. If you have a swing-fall hazard or do not have the required clearance distance, STOP and reevaluate your application and system. Your work location should never exceed an angle of 15 degrees in any direction in relation to your SAL's anchorage location.

4. Inspect your anchorage connector and ensure it is installed in accordance with the manufacturer's instructions, and so as to allow no more than six feet of free fall (the anchorage connector should be at or above the level of your back D-ring on your Full Body Harness.

5. Attach your SAL's Anchorage-End Connector to your anchorage. Ensure that the gate on the anchorage-end connector closes and latches automatically and securely.

6. SAL's with rebar hooks may be attached to properly-rated structural

members such as pipes and scaffolding, provided they are horizontal relative to the walking/working surface and that the rebar hook will be unable to slide off the end of the member. Never attach to a diagonal or vertical structural member or any anchor point where the rebar hook may slide off in the event of a fall.

7. You are now tied-off and protected by your SAL. Proceed with your work, moving carefully and deliberately while being aware of slipping, tripping and snagging hazards. Be aware that the SAL is only six feet long, and any of these may cause you to loose your footing, resulting in a possible fall.

8. When proceeding to another work location, and not tied off to an anchor point, the anchorage end or ends of your SAL should be attached to the lanyard keepers on or adjacent to the chest strap of your full body harness. Never attach the anchorage end or ends to any other point on your harness, as this could result in serious injury or death.

Dual-Leg or "Y"-Leg Lanyards and 100% Tie-Off

KwikSafety manufactures a wide variety of Dual-Leg or "Y"-Leg Shock-Absorbing Lanyards. These are intended to be used for 100% Tie-Off, allowing the user to transition from one anchorage to another while being continuously tied-off. They are also exceptionally useful in Tower and Positioning applications as a back-up fall arrest connecting device, allowing the user to ascend and descend between work positions while always remaining tied-off.

1. Attach your "Y"-Leg SAL to the back D-ring of your Full Body Harness by depressing the keeper and opening the gate on the double-locking snap hook at the attachment end. Connect the hook to the D-ring and release the gate and keeper. Ensure the gate closes and locks and that the D-ring is fully engaged by the snap hook. The Attachment-End Connector is always adjacent to the shock-absorber element, and joins the two legs of the lanyards together. Never attempt to attach either Anchorage-End Connector to the back D-ring of your FBH. Never attempt to attach multiple users to a "Y"-Leg SAL. Never attempt to extend your reach by using a "Y"-Leg SAL as a "12-foot lanyard": Any of these arrangements could result in serious injury or death. See Figures below.

2. Attach the Anchorage-End Connectors of your "Y-Leg SAL to the lanyard keepers on either end of the chest strap of your Full Body Harness. Never attach the Anchorage-End Connectors to any other point on your Full Body Harness: Serious injury or death could result.

3. Proceed to your work location. If you are working in the vicinity of a fall hazard, calculate possible swing fall hazards, total fall distance, and required clearance distance. If you have a swing-fall hazard or do not have the required clearance distance, STOP and reevaluate your application and system. Your work location should never exceed an angle of 15 degrees in any direction in relation to your SAL's anchorage location or locations.

4. Inspect your anchorage connectors(s) and ensure installation is in accordance with the manufacturer's instructions, and so as to allow no more than six feet of free fall (the anchorage connector should be at or above the level of your back D-ring on your Full Body Harness.

5. Attach the Anchorage-End Connector from one leg of your SAL to your anchorage, leaving the other leg attached to the lanyard keeper on your FBH. Ensure that the gate on the anchorage-end connector closes and latches automatically and securely.

6. "Y"-Leg SAL's with rebar hooks may be attached to properly-rated structural members such as pipes and scaffolding, provided they are horizontal relative to the walking/working surface and that the rebar hook will be unable to slide off the end of the member. Never attach to a diagonal or vertical structural member or any anchor point where the rebar hook may slide off in the event of a fall.

7. You are now tied-off and protected by your SAL. Proceed with your work, moving carefully and deliberately while being aware of slipping, tripping and snagging hazards. Be aware that the SAL is only six feet long, and any of these may cause you to loose your footing, resulting in a possible fall.

8. When transitioning from one anchorage to another, remain tied-off to the first anchorage. Attach the Anchorage-End Connector from the free leg of your "Y"-Leg SAL to the next anchorage.
Once tied-off to your second anchorage, disconnect from the first and attach the free leg of your "Y"-Leg SAL to the lanyard keeper on your FBH and proceed with your work.

4. ANCHORAGE CONSIDERATIONS

The anchorage to which this SAL is attached must capable of sustaining static loads in directions applied by the personal fall arrest system of at least 3,600 lbs (or at least twice the expected dynamic load) with certification of a qualified person (architect, structural engineer, etc.), or 5,000 lbs in the absence of certification. If multiple personal fall arrest systems are

being attached to the same anchorage, the minimum values stated above must be multiplied by the number of users.

Ensure that the anchorage connector that you are using is compatible with the anchor point to which you are attaching it. If you are using this SAL with a Horizontal Lifeline, tripod or davit, ensure that it is compatible with these systems by checking the manufacturer's instructions for these systems for the minimum performance requirements of deceleration devices.

Be sure that your anchorage is mounted overhead or above the level of the back d-ring of your full body harness. Be sure to calculate your clear-fall and to avoid swing fall hazards. Ensure the fall path is clear of obstructions and impalement hazards.

5. EMPLOYER AND USER TRAINING

Special notes for the Employer

As an employer, you may be obliged to provide Personal Protective Equipment (to include Personal Fall Arrest and Fall Protection Equipment) along with an appropriate amount of training to your employees so that they will be adequately prepared to use this equipment in the course of their work. Another important resource for employers is the Consensus standard on Managed Fall Protection: ANSI Z359.13-2013.

Equally important is the subject of product/equipment selection. If you are obliged to provide fall protection equipment for your employees, be sure to consult with or appoint a competent or qualified person to select and prescribe equipment that is suitable to address the specific hazards which may be present on your job-site or in your facility. There are different products for different applications, and under many circumstances these products are not interchangeable. If you have questions as to whether this product is suitable for your application, please contact KwikSafety for assistance.

It is important to note that improper use of fall arrest equipment can be just as dangerous as not using it at all. Failure to adequately train and supervise your employees may result in serious injury or death. It is critical to have a training program supported by documentation, refresher/remedial training and to establish best practices where the employment of all PPE is concerned.

User Training

It is the responsibility of the user of this equipment to read and fully

understand these instructions before employing this product as part of a Personal Fall Arrest System (PFAS). Every user of fall protection should be provided a four to eight hour course of instruction for the Authorized User. Training must also be provided in the use of each component of the user's PFAS and in the recognition of fall hazards. During the course of this training, the user may not be exposed to a fall hazard.

6. FALL PROTECTION PLAN

The best way to address a fall hazard is to eliminate it entirely or to employ a passive system to restrict access to the hazard (i.e. guardrails, netting, covers, etc.) Fall arrest products are the last line of defense in the hierarchy of fall protection, and should be used as a last resort by employees who have been thoroughly trained. The accepted fall protection hierarchy is as follows:

- Eliminate the fall hazard.
- Passive fall protection (guardrails, safety nets, barriers, etc.)
- Fall Restraint (prevent the worker from having access to the fall hazard by using a fixed lanyard which is short enough to restrict access to the hazard).
- Fall Arrest (utilizing Personal Fall Arrest Systems)
- Administrative Controls (use of warning lines, controlled access zones or monitors).

The Fall Protection Plan

As a minimum, a fall protection plan should identify and/or address the following points:

- Any and all fall hazards which may exist on your job-site or in your facility.
- Steps that have been taken to eliminate each fall hazard.
- Equipment that has been or will be employed to address each fall hazard.
- Provisions for 100% continuous fall protection in the vicinity of all fall hazards.
- Training procedures for all authorized persons.
- Identification of acceptable anchorages for positioning, restraint and fall arrest.
- Clear-fall requirements.
- Use and egress from the system.
- Limitations on use of the system (maximum Free-fall, arrest force and maximum number and permitted locations of authorized persons who may use the system).

• Procedures for installation, use and removal of the system.
• Detailed instructions for inspection of systems and system components to include rejection criteria and replacement procedures.
• A detailed plan and procedures for the rescue of a worker who may be involved in a fall event.

Rescue Plan
The rescue plan should include detailed procedures for summoning a professional rescue agency (such as the local fire department) and/or for performing self-rescue or in-house rescue.

For detailed assistance in formulating and maintaining an effective rescue plan, see ANSI Z359.13-2013.

7. MAINTENANCE, SERVICE AND STORAGE

Clean the polyester lanyard with a warm water and mild detergent solution. Wipe the wire rope lanyard with a clean dry cloth.

DO NOT use bleach or bleach solutions. Dry hardware with a clean, dry cloth, and hang to air dry. DO NOT use a power washer or dry with heat in a laundry dryer.

DO NOT attempt to disassemble the unit. A buildup of dirt, solvents, paint, etc. may prevent the lanyard from working properly, and in severe cases degrade the webbing. If you have questions concerning the condition of your lanyard, remove it from service and contact KwikSafety. Store lanyards in a cool, dry, clean environment out of direct sunlight. Avoid areas where heat, oil, chemicals or their vapors may exist. Thoroughly inspect the lanyard after extended storage.

8. INSPECTION

Mandatory Inspection: ANSI Z359 requires that fall protection equipment be inspected by a competent person other than the user at least once every six months. Harsh conditions may accelerate wear and corrosion and require more frequent inspections.

Inspection Procedure: Inspect all webbing (straps) and stitching for:
1. Pulled or broken threads
2. Cuts and fraying
3. Abrasion
4. Excessive wear
5. Burns, heat and chemical degradation

Broken stitches or separation of webbing inside the lanyard could indicate that the lanyard is damaged and must be removed from service.

Inspect all metallic hardware (snap hooks, carabiners, rebar hooks, adjuster buckles, etc.) for:

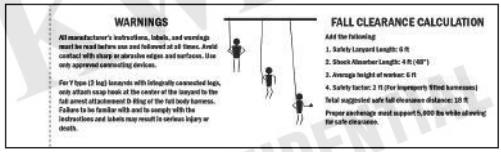
1. Deformation
2. Fractures, cracks,pitting
3. Corrosion
4. Burrs, sharp edges, cuts, deep nicks
5. Missing or loose parts
6. Improper function
7. Evidence of excessive heat, chemical, or electrical exposures

Ensure snap hook gates close and lock. All labels should be present and fully legible. Punch or mark the inspection label. Record the results of the inspection on the Inspection Record. If inspection reveals a defective condition or improper maintenance, remove the unit from service immediately.

IMROPTANT: Only KwikSafety or parties authorized in writing may make repairs to this equipment. And require that the authorized person be provided a rescue plan and appropriate training before using the equipment where suspension could occur.

9. LABELS

Product labels must be present and legible. If they are not, remove the product from service.



WHERE TO CHECK LABELS

Labels can be found underneath the clear protectector on the lanyard.

INSPECTION LOG

SERIAL NUMBER:

MODEL NUMBER:

DATE PURCHASED:

DATE FIRST USED:

Inspection Date	Inspection Items Noted	Corrective Action	Maintenance Performed	Approved by:

10. FALL INFORMATION

Free-Fall

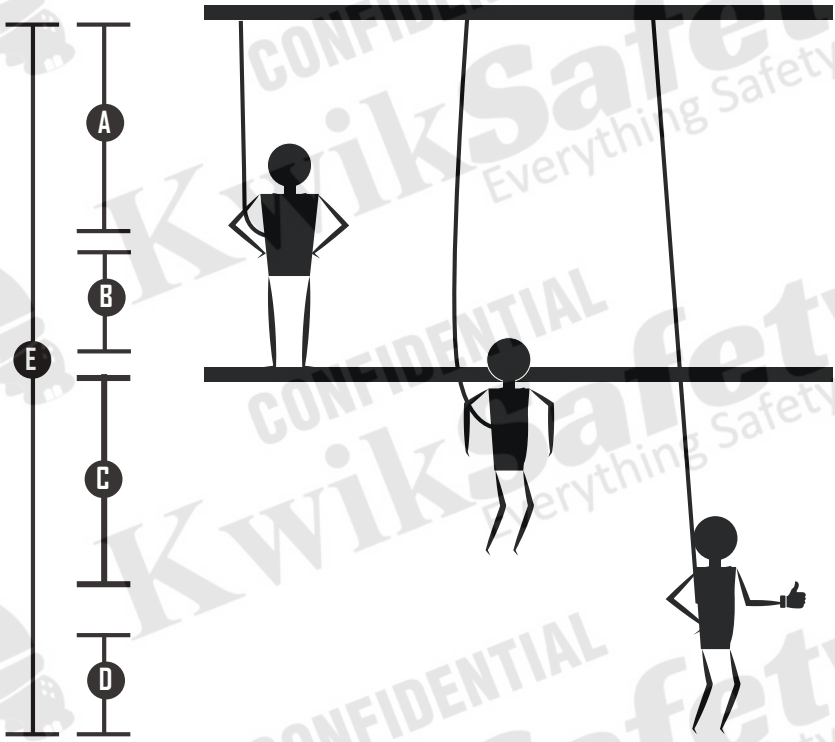
Free-Fall is the distance that a worker will fall before the connecting device or deceleration device elements of the PFAS will begin to engage during a fall event. KwikSafety allows a maximum Free-Fall Distance of 6' (6 feet) when rigging a Personal Fall Arrest System (PFAS). In some cases, exceptions may be allowed when there is no practical way to limit the Free-Fall Distance to 6', such as a job-site where no overhead anchor-point is available. Tying off in a manner that would create a Free-Fall greater than 6' should always be a last resort. If you are rigging a system that allows more than 6' of Free-Fall, make sure your Connecting Device/Deceleration Device is rated for this application.

Clear-Fall

Clear-Fall or Clear-Fall Distance is the distance that is required to safely arrest the fall of a user. When working at heights and using a PFAS, it is important to consider the distance between the walking/working level and the next lower level to ensure that the components selected are capable of arresting the user's fall before they hit the next lower level. The required Clear-Fall Distance can easily be calculated by adding together the Free-Fall Distance, the Deceleration Distance, the height of the user plus a safety factor of 2 feet. The formula for calculating Clear-Fall Distance is shown below:

Free-Fall Distance + Deceleration Distance + Height of Worker + Safety Factor = Clear-Fall Distance

It is also necessary to consider the fall path when determining the Clear-Fall limitations in your application. Ensure the fall path is clear of obstructions, protrusions, equipment or materials that may be a hazard in the event of a fall. Pay special attention to those items which may present an impalement hazard. Obstructions in the fall path may be just as hazardous as the fall itself, and your PFAS may not be able to protect you from these hazards. Failure to clear the fall path may result in serious injury or death. Rig your PFAS with extreme caution, and be aware of all of the factors that may come into play in the event of a fall.



GRAPHIC ILLUSTRATION OF CLEAR-FALL DISTANCE AND THE METHOD FOR CALCULATING

1) Free Fall Distance: 6’ Total
2) Deceleration Distance: 3.5’ Total
3) Height of Worker: 6’ Total
4) Safety Factor: 2’ Total
5) Required Distance from Anchorage: 17.5’ Total

FIGURE 1: Shock Absorbing Lanyard Features	
A	Polyester Webbing
B	Alloy Steel Rebar Hook
C	Alloy Steel Snap Hook
D	External Shock Absorber Pack w/ Label & Protector

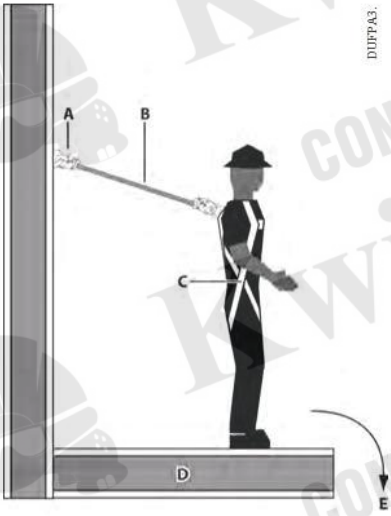


FIGURE 2: Restraint	
A	Restraint Anchor
B	Restraint Lanyard
C	Full Body Harness (FBH)
D	Walking/Working Surface
E	Fall Hazard Area

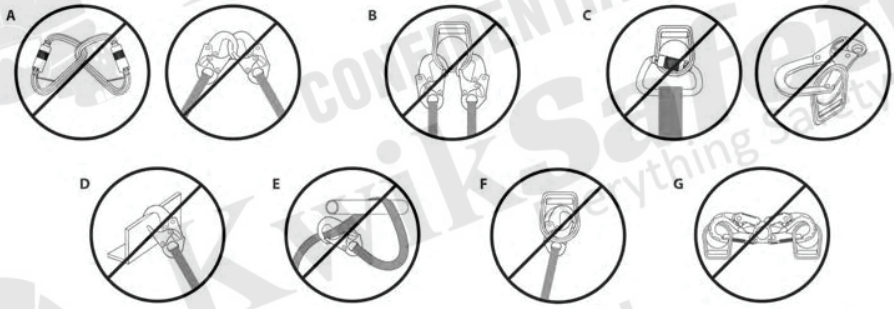


FIGURE 3: Incorrect Connections	
A	Never connect two active components (snap hooks or carabiners) to each other.
B	Never connect two active components (snap hooks or carabiners) to a single D-ring at the same time.
C	Never connect in a way that would produce a condition of loading on the gate.
D	Never attach to a object in a manner whereby the gate (of the snap hook or carabiner) would be prevented from fully closing and locking. Always guard against false connections by visually inspecting for closure and lock.
E	Never attach explicitly to a constituent sub component (webbing, cable or rope) unless specifically provided for by the manufacturer's instructions for both sub components (snap hook or carabiner and webbing, cable or rope).
F	Never attach in a manner where an element of the connector (gate or release lever) may become caught on the anchor thereby producing additional risk of false engagement.
G	Never attach a spreader snap hook to two side/positioning D-rings in a manner whereby the D-rings will engage the gates; the gates on a spreader must always be facing away from the D-rings during work positioning.

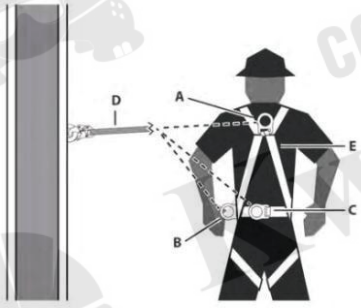


FIGURE 4: Suitable Attachment Methods for Restraint	
A	Connection to Dorsal D-Ring on Harness
B	Connection to Side D-Ring on Harness
C	Connection to Lumbar D-Ring on Restraint Belt
D	Restraint Lanyard
E	Full Body Harness (FBH)

Acronyms for Fall Protection and Fall Arrest			
ACTD	Activation Distance	**HLL**	Horizontal Lifeline
AD	Arrest Distance	**MAF**	Maximum Arrest Force
CSS	Connecting Subsystem	**mm**	Millimeter
DD	Deceleration Distance	**PFAS**	Personal Fall Arrest System
DDV	Deceleration Device	**PPE**	Personal Protective Equipment
FACSS	Fall Arrest or Connecting Subsystem	**SRD**	Self-Retracting Device
FAS	Fall Arrest System	**TFD**	Total Fall Distance
FBH	Full Body Harness	**VLL**	Vertical Lifeline
FF	Free Fall	**VLLSS**	Vertical Lifeline Subsytem
FFD	Free Fall Distance	**WPS**	Work Positioning System
Other Acronyms for Fall Protection and Fall Arrest			
RGLS	Rope Grab Lanyard Set	**ANSI**	American National Standards Institute
SAL	Shock Absorbing Lanyard	**OSHA**	Occupational Safety and Health Administration
cm	Centimeters	**ASTM**	American Society for Testing and Materials
kN	kilo-Newton	**lbs**	pounds (weight)
RPA	Rebar Positioning Assembly	**TPA**	Tower Positioning Assembly