

FALL PROTECTION

DEFINITIONS & GUIDELINES

- **Passive Fall Prevention**
 - The best way to avoid a fall is not to work from a height. **Bring the work down to ground level** whenever possible.
 - If you are unable bring the work to ground level, work from access equipment such as **scaffolding, a platform, an aerial lift, or a ladder.**
 - If the work environment does not allow you to use access equipment, secure the elevated work area with a passive fall prevention barrier system, such as **guardrails** or a **roof parapet at least 42" high.**
- **Fall Restraint**
 - If the work environment does not allow for the use of a passive fall prevention system, use an approved fall restraint system.
 - Fall restraint systems, such as a harness, and rope grab prevent the employee from reaching the edge of the roof.
- **Fall Arrest**
 - A fall arrest system, such as a **rope grab kit, lanyard, and approved or acceptable anchorage point** arrests and limits the fall of an employee.
 - Plan a method of rescue prior to the use of a fall arrest system.
- **Controlled Access Zone (CAZ)**
 - When on elevated surfaces such as rooftops, platforms, or around pits and tanks one option is to establish a Controlled Access Zone (CAZ). A CAZ protects employees not wearing fall protection equipment by warning them when they are within six feet of the fall hazard.
 - The system uses stanchions and control lines with high visibility flags every six feet. The line must be rated for two hundred pounds and be not less than six or more than 25 feet from the edge.
 - A safety monitor must be assigned to watch and warn employees who leave the safe zone and enter the CAZ six foot zone who are not wearing fall protection gear.

TRIGGER HEIGHTS

Fall protection is required when employees are working within **six feet** from the unprotected edge of a set, platform, or roof, as indicated below:

- **For general production crews**, the trigger height for **mandatory fall protection is 4 feet.**
 - Guardrails (42"), or harnesses with appropriate anchorage points are required.
- **For construction work on a permanent structure**, the trigger height for **mandatory fall protection is 6' (7.5' in CA).**
 - Guardrails (42"), or harnesses with appropriate anchorage points are required.
- The trigger heights do not apply to work performed from portable ladders. If ladders are used properly, additional fall protection measures are generally not necessary.

GENERAL LADDER SAFETY

All employees must follow proper safety practices when using ladders. If ladders are maintained and used correctly, additional fall protection measures are generally not necessary.

- Inspect all ladders prior to use. Read all manufacturer safety warnings on the ladder and comply with them.
- Check for loose steps or rungs, cracked or split steps or side rails, loose or bent hinges, missing ladder feet, etc. All defective ladders shall be marked “defective” and brought to the attention of the supervisor and removed from service.
- Make sure the ladder is free of oil, grease, or other slippery hazards.
- Use ladders on stable and level surfaces only.
- Ladders shall not be placed in doorways unless protected by barricades or guards.
- If using a step ladder, make sure it is securely spread open. Never use a folding step ladder in an unfolded position.
- Make sure the ladder is securely fixed at both the top and the foot so that it cannot move from its top or bottom points of rest. If the ladder cannot be secured at the top and bottom, then securely fix it at the base. If this is not possible, have someone stand at the base of the ladder and secure it manually against slipping.
- When using an extension ladder, the base to height ratio should be placed at approximately 1 to 4.
- Ladders used to reach a walking surface or roof must extend at least 3 feet beyond the landing surface.
- Always face the ladder when ascending or descending.
- Use fiberglass or wood ladders when doing electrical work.
- Maintain three points of contact at all times while climbing. Carry tools in a tool belt, pouch, or holster, not in your hands. Keep your hands on the ladder.
- Do not stand on the top two steps of a step ladder.
- Do not try to reach so far above you or to either side that you lose your balance; instead, move the ladder.
- When you are using a hand line to pull up equipment or supplies, all material should be securely attached to the line, and you should be in a stable position complying with fall protection regulations.
- No one should be permitted to stand, walk, or work under a ladder while it is in use.
- When using rolling “A” frame trestle ladders, never extend them beyond twenty feet or manufacturer’s recommendation.
- Always lock or chock the wheels of trestle ladders to prevent any rolling or instability.

FIXED LADDERS

When climbing a fixed ladder over 20 feet in length without rest balconies, or a ladder that is not equipped with a ladder cage, **you must use a ladder safety device**. This equipment includes: a full-body harness and a sliding sleeve attached to either a fixed-rail or cable system.

- Inspect all fall protection equipment prior to use.
- Connect the sleeve to the “D” ring located on the front of your harness.
- Connect the sleeve to the fixed-rail or cable. Connect the sleeve onto the fixed-rail or cable with the arrow pointed toward the top of the ladder.
- Once attached, climb up the ladder normally. The detachable cable sleeve will follow you as you climb.
- When you reach the top of the ladder, carefully disconnect from the ladder safety device to exit the ladder.
- To descend the ladder, reattach your “D” ring to the sleeve and climb down smoothly in a normal manner. Allow the sleeve to “lead” you down. Climbing down out of position will cause the sleeve to lock onto the fixed-rail or cable.
- If the sleeve locks, move upward slightly to release the sleeve.
- You must be attached to the ladder safety system whenever you are on the ladder.

- Do not use unprotected fixed ladders over 20 feet in length. Contact your Production Safety Representative.

SOUNDSTAGE PERMANENTS

When working outside the catwalks, in the unprotected area of the permanents known as the “ozone,” **you must use fall arrest equipment.** This equipment includes: a full body harness and a self-retracting lanyard.

- Inspect all fall protection equipment prior to use.
- Locate an anchorage point for the self-retracting lanyard (SRL). Single-user anchorage points are located on the soundstage trusses at the corners of the ozone; are constructed of wire rope with thimbles; and have been identified with a yellow tag.
- Select an anchorage point as close as possible to where you are working to avoid or limit a possible swing fall.
- Connect the SRL to the anchorage point with a self-locking carabineer.
- Attach the double-locking snap hook from the SRL to the “D” ring located on the back of your harness.
- Avoid quick or sudden movements in any direction to prevent loss of balance from line tension or locking. The SRL maintains normal line tension when line is being steadily extracted and retracted. Do not allow the SRL to go slack.
- Practice using your attached SRL on the catwalk. This will familiarize you with the tension and locking actions of the system and make you aware of the forces applied to your body by the system during movement.
- If you need to move farther than the SRL will allow, return to the catwalk, and find another anchorage point. Never try to increase the length of an SRL by attaching it to another SRL.
- Never detach from the SRL until you are safely back on the catwalk.

WARNING: Do not allow the retractable lifeline to wrap around your arm. Do not turn and/or reach over the lifeline.

HORIZONTAL CABLE SYSTEM OVER PERMANENTS

An employee working outside the catwalks, in the unprotected area of the permanents known as the “ozone,” **must use fall arrest equipment.** This equipment includes: a full body harness, a shock absorbing lanyard, or a self-retracting lanyard (SRL), and a carabineer.

- Inspect all fall protection equipment prior to use. Inspect the horizontal wire rope cable for any kinks or damage.
- Select a horizontal line as close as possible to where you are working to avoid or limit a swing fall. These engineered lines are designed for two users per line.
- Connect the lanyard to the fixed horizontal anchorage line with a double-locking snap hook or self-locking carabineer.
- You may connect to the horizontal anchorage line either by:
 - Connecting the SRL to the horizontal line directly with a self-locking carabineer,
 - Substituting a 6-foot shock-absorbing “Y” lanyard for the SRL.
- Attach the double-locking snap hook from the SRL to the “D” ring located on the back of your harness.
- When using an SRL, avoid quick or sudden movements in any direction to prevent loss of balance from line

tension or locking. The SRL maintains normal line tension when line is being steadily extracted and retracted. Do not allow the SRL to go slack.

- Practice using the device on the catwalk. This will familiarize you with the tension and locking actions of the SRL and make you aware of the forces applied to your body by the line during movement.
- If you need to move farther than the lanyard will allow, return to the catwalk, and find another horizontal line. Never try to increase the length of a lanyard by attaching it to another lanyard.
- Never detach from the lanyard until you are safely back on the catwalk.

FALL PROTECTION: BELOW THE PERMANENTS – SINGLE ROPE GRAB SYSTEMS

When working at heights below the permanents that cannot be reached by using a ladder, aerial lift, or scaffolding, **you must use fall arrest equipment.** (Examples of this work include, hanging greenbeds or walking on the top of set walls). The equipment needed includes: a full body harness with a self-retracting lanyard, a vertical rope lifeline with rope grab, a carabineer, and a tag line.

- Inspect all fall protection equipment prior to use.
- Locate an anchorage point for the vertical lifeline. Single-user anchorage points are eyebolts located on the soundstage trusses and have been identified with a yellow tag.
- Select an anchorage point above you and as close as possible to where you are going to be working to avoid or limit a swing fall.
- Connect the vertical lifeline to the anchorage point with the double-locking snap hook.
- Open the rope grab and enclose the vertical lifeline with the rope grab (arrow pointed up) then tightly screw the rope grab to the vertical lifeline. **Make sure that the arrow on the rope grab is pointing up toward the anchorage point.**
- Attach the self-retracting lanyard (SRL) to the rope grab with a self-locking carabineer.
- Connect the tag line to the double-locking snap hook on the other end of the SRL.
- Position the rope grab, SRL and tag line on the lifeline so that the final height of the SRL is 6 feet above your intended work height.
- Protect the lifeline against rough edges by using a rope protector or by padding sharp corners.
- From the ground or greenbed, pull the tag line down and attach the double-locking snap hook from the SRL to the “D” ring located on the back of your harness.
- Never remove your lifeline until you are back on the ground or greenbed.
- If you need to move a longer distance horizontally across the set, you can rig two or more vertical lifeline systems. This will reduce the swing fall potential. (See “Multiple Rope Grab Systems” below.)

BELOW THE PERMANENTS – MULTIPLE ROPE GRAB SYSTEMS

When working at heights below the permanents that cannot be reached by using a ladder, aerial lift, or scaffolding, **you must use fall arrest equipment.** (Examples of this work include, hanging greenbeds or walking on the top of set walls).

When you need to move long distances horizontally across the set, use a multiple rope grab system. Two or more rope grab set-ups will allow you to travel across the set without risking a swing fall. This equipment includes: a full body harness the number of self-retracting lanyards (SRL’s) you intend to use, number of vertical lifelines with rope grabs you intend to use, tag lines, carabineers, and a double D-ring extender for your harness.

- Inspect all fall protection equipment prior to use.

- Locate an anchorage point for each of your vertical lifelines. Single-user anchorage points are located on the soundstage trusses and have been identified with a yellow tag.
- Select anchorage points above you and as close as possible to where you are going to be working to avoid or limit a swing fall.
- Connect the vertical lifelines to the anchorage points you have chosen with the double-locking snap hook. Attach only one vertical lifeline per anchor point.
- Open the rope grab and enclose the vertical lifeline with the rope grab (arrow pointed up) then tightly screw the rope grab to the vertical lifeline. **Make sure that the arrow on the rope grab is pointing up toward the anchorage point.**
- Attach the self-retracting lanyard (SRL) to the rope grab with a self-locking carabineer.
- Connect the tag line to the double-locking snap hook on the SRL.
- Position the rope grab, SRL and tag line on the lifeline so that the final height of the SRL is 6 feet above your intended work height.
- Protect the lifeline against rough edges by using a rope protector or by padding sharp corners.
- From the ground or greenbed, pull the tag line and attach the double-locking snap hook from the SRL to the double D-ring extender attached to the D-ring on the back of your harness.
- As you work move toward the next SRL you previously positioned. Pull the tag line and hook the double-locking snap hook to the second D-Ring extender.
- Unhook the first double-locking snap hook from the first SRL.
- Never remove one lifeline until you are safely attached to the second lifeline, or until you are back on the ground or greenbed.

ROOFTOP RESTRAINT

When working within 6 feet of the unprotected edge of a flat or low-pitched roof (maximum allowable pitch 4:12 slope), or around unguarded skylights, then **you must use fall restraint equipment**. This equipment includes a full-body harness and a lifeline; an adjustable rope grab all attached to an appropriate anchorage point by a cross arm strap or other similar method.

(**Note:** Roof edges protected with a 42" guardrail (permanent or a temporary equivalent) or a 42" or higher parapet wall do not require the use of fall restraint equipment.)

- Inspect all fall protection equipment prior to use.
- Select an anchorage point as close as possible to where you are working. Because you will be harnessing yourself so that it would be impossible to fall over the edge of the building (*Fall Restraint*) the anchorage point should be four times heavier than your body weight.
 - *Prior to working on a roof with no anchorage points, contact your Production Safety Representative.)*
- Connect the lifeline to the anchorage point cross arm strap D-Ring (or equivalent device) with a double-locking snap hook or self-locking carabineer.
- Open the rope grab and enclose the vertical lifeline with the rope grab (arrow pointed up) then tightly screw the rope grab to the vertical lifeline. **Make sure that the arrow on the rope grab is pointing up toward the anchorage point.**
- Position the rope grab on the lifeline so that its maximum extended length will physically limit your ability to inadvertently fall over the edge of the roof.

- Attach the double-locking snap hook or self-locking carabineer from the rope grab to the “D” ring located on the back of your harness.
- You must be attached to the system prior positioning yourself for work.

CONTROLLED ACCESS ZONE

When you are working in elevated areas such as rooftops, unprotected platforms, or around pits and tanks, one option for fall prevention is to establish a **Controlled Access Zone (CAZ)**. The CAZ is the area within six feet of the edge of the fall hazard.

A CAZ protect employees not wearing fall arrest or fall restraint equipment by physically and verbally warning them when they are within 6 feet of a potential fall hazard. This system requires stanchions, control lines, high visibility markers and additional employees acting as safety monitors.

WARNING: The CAZ requires vigilance, and a dedicated designated “safety monitor”. It is therefore not appropriate to all situations.

- The Controlled Access Zone (CAZ) is separated from the Safe Zone by a heavy control line that restricts access to the CAZ.
- **Post Signs** at the entrance of the Safe Zone warning employees or unauthorized personnel that they:
 - are entering a CAZ;
 - should stay within the visibly marked control lines (Safe Zone); and
 - do as they are told by the Safety Monitors.
- Control lines must be positioned not less than 6 feet from the fall hazard and not more than 25 feet from the fall hazard.
- Expand the CAZ during adverse conditions (e.g., rain, wind, slippery roof), or when working at an additional elevation within the "Safe Zone" (e.g., on a step ladder).
- Make sure control lines consist of ropes, wires, or equivalent materials that have a minimum breaking strength of 200 pounds.
- Control lines should be clearly marked every six feet with high-visibility materials. (Bright barricade tape or red flags).
- Rig each line so it is between 39 inches and 45 inches from the working surface. Do not let them “sag”.
- Anyone working outside the “SAFE ZONE” and inside the CAZ (within 6 feet of the leading edge or fall hazard), must wear fall restraint or fall arrest equipment.
- Designate a person whose sole job and responsibility is to monitor the safety of other employees in the work area and who will:
 - watch and warn employees when it appears that they are acting in an unsafe manner;
 - crossing the CAZ line without wearing fall protection or fall arrest protection.
- The Safety Monitor must be able to see that the entire CAZ is clear of unprotected employees. If necessary, add an additional Safety Monitor to ensure the CAZ remains clear.
- All Employees who working at a location utilizing a Controlled Access Zone will comply with the Safety Monitors directives.
- If there are repeated infractions into the CAZ, the Safety Monitor will bring the matter to the attention of the 1st AD.

IN THE EVENT OF A FALL

(NOTE: All falls sustained by employees in fall protection equipment should immediately be reported to local emergency personnel (911).

Self- Rescue

If a person falls a short distance and is conscious, uninjured, and can reach a working surface safely, the employee should do so and be taken to First Aid.

Ladder or Aerial Work Platform Rescue: if self-rescue is not possible, the next option is the use of a ladder, “condor,” or scissor lift. This rescue depends upon the accessibility and condition of the person, the availability of appropriate equipped personnel and the necessary equipment. Ensure the employee is taken to First Aid.

Fire Department Rescue: if the previous rescue options cannot be accomplished in a prompt and safe manner, the fire department personnel will rescue the person using advanced techniques.

- Establish verbal contact and continuously monitor the employee.
- Watch for signs or complaints of suspension trauma: faintness, nausea, breathlessness, dizziness, sweating, paleness, hot flashes, loss of vision or increased heart rate.
- Continue to talk to the suspended worker; tell them to keep their legs moving to increase circulation.
- Safely lower a rope with a loop tied in the end of it and the opposite end tied to an anchor point to the suspended worker.
 - Have the worker step into the loop and stand up at regular intervals to remove the pressure on his legs created by the leg straps. This also enables him to shift his body weight around into a more comfortable position.
- After the event do not continue to use any of the Fall Protection Equipment involved in the incident. Tag it, “*Do Not Use*” and return it to your supervisor or Production Safety Representative.
- **Report all falls to your supervisor and Production Safety Representative.**