Fall-Protection Harnesses
Hazard Alert

Falls kill more than 300 construction workers every year and hurt thousands. Deadly falls on the job are from unprotected roof edges, roof and floor openings, scaffolds, ladders, structural steel, leading edges, open shafts, and more.

Protect Yourself

Whenever fall protection is needed, make sure you have the right fall-protection system, know how it works, get trained to use it – and use it.

Where eliminating the hazard, guardrails, or safety nets won't work, you need personal protective equipment (PPE) – fall-restraint systems, personal fall-arrest systems, or work positioning systems (on rebar). Restraint systems keep you from falling. Fall-arrest systems stop falls. **You will need a full-body harness** if you use one of these systems.

A full-body harness has straps worn around your trunk and thighs, with one or more D-rings in back to attach the harness to other parts of the system. If you fall, a properly fitted harness spreads the stopping force over your thighs, pelvis, chest, and shoulders.

Choosing a Harness

• Learn about the types of fall hazards on your job.
• Choose the right type of fall protection for each type of fall hazard. **Never use a body belt,** seat-only harness, or chest-only harness for fall protection. Use a full-body harness instead.
• You can use a harness with an anchorage, a lanyard, a retractable lifeline, a vertical lifeline, a travel rail, a horizontal lifeline, a fall arrester, and/or a shock absorber. A fall-arrest system should let you fall no more than 6 feet. A work-positioning device should let you fall 2 feet or less.
• A registered professional engineer should design a fall protection system. A qualified person must supervise the setting up.**
• Make sure the harness fits you and is comfortable, to prevent body strain. You can get shoulder and back pads to reduce harness pressure. Full-body cross-chest harnesses are more comfortable for women and can reduce bruising when falls are stopped.

Training

• The employer must fit and train each worker for the equipment to be used.
• A competent person must train workers at risk of falling about types of fall hazards, how to protect yourself, and other hazards and limitations in using fall protection.** Training must cover all that can happen, like hanging in a harness and rescue. The trainer should tell workers about medical conditions that can be made worse by a fall in a harness.
• If the worksite changes or the type of fall protection equipment is changed, workers using the equipment must be retrained.

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**OSHA says a *qualified person*...by extensive knowledge, training, and experience can...solve...problems related to the subject matter.... A *competent person* is...capable of identifying existing and predictable hazards...and has authorization to take prompt measures to eliminate them.

Using a Harness

Follow manufacturers' instructions for wearing harnesses. Your employer must keep these instructions so you can see them when you ask. For most full-body harnesses, every time you use one, do this:

- Carefully look over the harness.
- Hold the harness by the back D-ring and shake it so all straps fall in place.
- Slip the straps over your shoulders so the D-ring is in the middle of your back.
- Connect the chest and/or waist straps. These straps should fit snugly.
- Reach between your legs and connect one long strap to the buckle or closure on your thigh. Repeat with the second strap.
- After you connect both straps, pull them tight. The harness should be snug but let you move freely.
- Connect the harness to the right fall-protection system.
- Make sure your anchor point is approved for the way you will use it. If you are not sure, check with the competent person for the job.
- Never use gear that has already been in a fall, unless it has been recertified by the manufacturer.

Rescue

Workers who fall in a harness may not be able to rescue themselves. So set up a rescue plan for each possible fall situation. Make sure ladder trucks will be able to reach hanging workers. Or plan ahead for other ways to rescue them. Be sure medical and rescue teams will get there fast, if needed. This is because hanging in a harness for more than a half-hour can be fatal. And a worker who falls may have other injuries.

Inspections

- Inspect your equipment before each use. A competent person should inspect it at least once each year.
- Follow all manufacturer instructions about inspecting, caring for, and storing the equipment.
- After inspecting your equipment as the manufacturer says, inspect it for:
    - Missing or unreadable markings or warnings
    - Missing parts
    - Damage to **metal parts** – any changes, cracks, sharp edges, distortion, corrosion, chemical damage, too much heating, or too much wear
    - Defects in or damage to any **straps or ropes** – any changes, fraying, unsplicing, unlaying, kinking, knotting, roping, broken or pulled stitches, abrasion, excessive oiling, or sections that are too old, too worn, or too dirty
    - Missing parts or signs of defects in or damage to – or improper working of – **mechanical parts and connectors.**
- If equipment looks as if it needs repair – or it is time for maintenance – tag it, "**Do not use**," and remove it from service.

Maintenance and Storage

To help keep you safe, fall-protection equipment must be stored the right way.

- The employer should maintain and store the equipment, according to the manufacturer's instructions.
- Store equipment away from heat, light, dampness, oil, chemicals, or other damaging conditions.
- Hang each harness by the back D-ring to help keep the shape when not in use.
- Take special questions, which may arise because of job conditions, to the employer.

For more information, call your local union, the Center to Protect Workers' Rights (CPWR) (301-578-8500 or www.cpwr.com), the National Institute for Occupational Safety and Health (1-800-35-NIOSH or www.cdc.gov/niosh), or OSHA (1-800-321-OSHA or www.osha.gov). Or check the website www.elcosh.org

 CPWR is the research, development, and training arm of the Building and Construction Trades Dept., AFL-CIO: CPWR, Suite 1000, 8484 Georgia Ave., Silver Spring, MD 20910. (Edward C. Sullivan is president of the Building and Construction Trades Dept. and of CPWR andSean McGarvey is secretary-treasurer.) Production of this card was supported by grant 1 U54 OH008307 from the National Institute for Occupational Safety and Health and grants U45-ES09764 and U45-ES06185 from the National Institute of Environmental Health Sciences. The contents are solely the responsibility of the authors and do not necessarily represent the official views of NIOSH or NIEHS.

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