

Section 4

FALL PROTECTION

General Requirements

Fall protection is required when a worker is exposed to a fall hazard (working more than 6 ft (1.8 m) above a lower level and an opening more than 12 in. (305 mm).

There are three ways of controlling fall hazards. Elimination of the fall hazard should be the first consideration. The second consideration is a guard rail system, and the third is a personal fall arrest system.

4.1 Personal Fall-Arrest System

Figure 4a

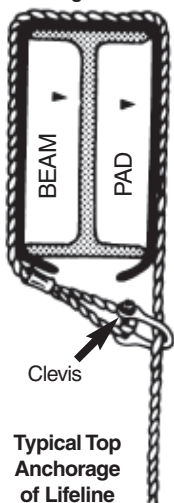
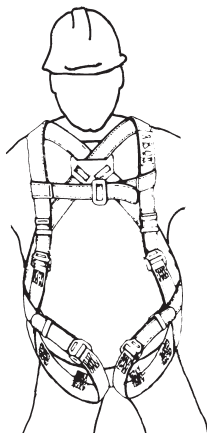


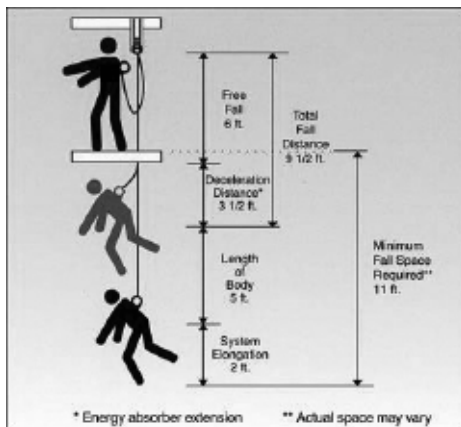
Figure 4b (next page) shows the attachment of the body harness and shock-absorbing lanyard to the lifeline while working in the hoistway/wellway, and an example of typical top anchorage of the lifeline is shown in Figure 4a.

- (a) Only company-approved lifelines, shock-absorbing lanyards and body harnesses shall be used.
- (b) All fall protection components shall be compatible.
- (c) Lifelines shall be protected against being cut or abraded. Only synthetic or wire rope shall be used for lifelines.
- (d) Lifelines shall be installed before working in the hoistway/wellway and shall run the full length of the hoist way/wellway and be so arranged to

Figure 4b



Full-Body Harness



permit tying off before entering the hoistway/wellway. Prior to use the personal fall-arrest system shall be approved by a **Competent Person**.

- (e) Only one worker is permitted on a vertical lifeline, and that lifeline shall have a breaking strength greater than 5000 lbs (2268 kg) after it has been attached to the anchorage point.
- (f) Shock-absorbing lanyards shall be anchored to the lifeline and shall be above shoulder height so that any fall shall not exceed 6 ft (1.8 m). When determining fall heights be sure to use proper fall clearance distances (refer to figure 4b). Lanyards shall be connected to a vertical lifeline by means of a rope grab; the lanyard shall not be attached directly to the lifeline.
- (g) Lifelines, harnesses and shock-absorbing lanyards subjected to impact loading shall be immediately removed from service. They shall be eliminated and destroyed for employee safeguarding.
- (h) Tying to the hoist line is prohibited. Proper rope grab shall be used.
- (i) Fall protection shall be used on top of a completed elevator car where there is a fall hazard and the car is secured from movement.
- (j) On a completed car secured from movement, tie off when exposed to a fall hazard. Do not position yourself where there is fall hazard.
- (k) Replace personal fall protection equipment at intervals recommended by the manufacturer.
- (l) Before using a body harness, shock-absorbing lanyard and lifeline, inspect them carefully each time for signs of wear or damage.

4.1.1 Inspection and Maintenance Checklist

To maintain service life and high performance, personal fall arrest systems shall be inspected before each use. Replace the personal fall arrest system if any defective conditions are found.

- ☐ *Webbing.* Grasp the webbing with your hands 6 in. (150 mm) to 8 in. (200 mm) apart. Bend the webbing in an inverted “U”. The resulting surface tension makes damaged fibers or cuts easier to see. Follow this procedure the entire length of the webbing, inspecting both sides of each strap. Watch for frayed edges, broken fibers, pulled stitches, cuts, burns and chemical damage.
- ☐ *D-Rings/Back Pads.* Check D-rings for distortion, cracks, breaks, and rough or sharp edges. The D-ring should pivot freely. D-ring back pads should also be inspected for damage.
- ☐ *Attachment of Buckles.* Attachments of buckles and D-rings should be given special attention. Note any unusual wear frayed or cut fibers or distortion the buckles or D-rings.
- ☐ *Tongue/Grommets.* The tongue receives heavy wear from repeated buckling and unbuckling. Inspect for loose, distorted or broken grommets. Webbing shall not have additional punched holes.
- ☐ *Tongue Buckle.* Buckle tongues shall be free of distortion in shape and motion. They should overlap the buckle frame and move freely back and forth in their socket. The roller shall turn freely on the frame. Check for distortion or sharp edges.
- ☐ *Friction and Mating Buckles.* Inspect the buckle for distortion. The outer bars and center bars must be straight. Pay special attention to corners and attachment points of the center bar.

Visual Indications of Damage to Webbing and Rope. The following indications refer to nylon and polyester webbing: