FALL PROTECTION: EQUIPMENT

Equipment Categories  Fall-protection equipment is divided, by function, into four categories: 
Fall Arrest, Positioning, Suspension and Retrieval.

1. FALL ARREST  Fall-arrest systems must be used any time a working height of 6’ or more is reached and the fall hazard cannot be engineered out. Working height is defined as the distance from the walking/working surface to a grade or lower level. A fall-arrest system is designed to be passive, and will only come into service should a fall occur. The following equipment is recommended as part of a fall arrest system:

   Personal protective gear: full-body harness (4” D-ring)
   Connecting device: shock-absorbing lanyard (4-foot only)
   Anchorage point: a nchorage point & anchorage connector must support 5,000 pounds

2. POSITIONING  The second category is the personal positioning system, which holds a worker in place while allowing a hands-free work environment. Whenever a worker leans back, the system is activated, making this an active system. The following equipment is an example of a widely used positioning system:

   Personal protective gear: full body harness (4” D-ring)
   Connecting device: rebar chain assembly
   Attachment point: vertical rods

   Note that a fall-arrest system should be used in conjunction with this system. A combination system should be used whenever possible, since a personal positioning system is not specifically designed for fall arrest purposes. By using this combination system, the fall-arrest components will be activated should the worker accidentally fall.

3. RETRIEVAL  Another category of the system is mostly used in confined space, and is known as a personal retrieval system.  This system is primarily used where workers must be lowered into tanks, manholes, etc., and may require retrieval from above should an emergency occur. A typical retrieval system includes:

   Personal protective gear: full body harness (4” D-ring)
   Connecting device: retractable lifeline/rescue unit
   Attachment point: tripod or unihoist

   Each year, over 100,000 injuries and deaths are attributable to work-related falls. Regulatory agencies make it quite clear that it is the employer’s responsibility to develop a fall-protection plan/program that complies with regulations. Compliance is important, but even more important is a proper fall protection program that can eliminate or seriously reduce on-the-job injuries.

A comprehensive fall-protection program must be viewed as a “total” system, beginning with hazard identification. A personal fall-arrest system (PFAS) can be viewed as a “system within a system.” Three key components of the PFAS need to be in place—and properly used—to provide maximum worker protection.

THREE-COMPONENT SYSTEM

• Body Wear  The first component is the personal protective gear worn by workers while performing the job. Full-body harnesses are the only appropriate equipment to be worn in the event of a free fall. Harnesses should be selected to meet the needs of the work environment. In some cases, a customized harness may be required.

• Connection Devices  The second system component is the connecting device. This device can be a lanyard, ladder climbing device or retractable lifeline.

• Anchorage Point  The final component of the system is the anchorage point (often called the tie-off point). This point must be capable of supporting 5,000 pounds per worker.

Individually, none of these components will provide protection from a fall. Used properly with each other, however, they form a personal fall-arrest system, which becomes a critically important part of the total fall-protection system.