

## **New Developments in Fall Protection Planning**

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Fall protection management is taking a step forward with the new ANSI Z359 standards due mid-year 2007 that set minimum training requirements for workers by Competent and Qualified Persons including their trainers and introduces the term Authorized Persons and Competent Rescuer into this suite of standards:

Z359.0 Definitions and Nomenclature for Fall Protection and Fall Arrest

Z359.1 Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components

Z359.2 Minimum requirements for a Comprehensive Managed Fall Protection Program

Z359.3 Safety Requirements for Positioning and Travel Restraint Systems

Z359.4 Safety Requirements for Assisted-Rescue and Self-Rescue Systems, Subsystems and Components

Competent Persons have several duties based on the OSHA Construction regulations and also Z359 standards. There may be several Competent Person contributors to an organization's fall protection program. For example:

1. Fall Protection Plan
2. Site visit before start of work
3. Selection of fall protection systems
4. Training
5. Observation of work and ability to stop work
6. Inspection of fall protection systems and their proper use (Qualified Persons are responsible to inspect Horizontal Lifeline Systems) including equipment that has experienced a fall

Qualified Persons must be knowledgeable in anchorage requirements and design to validate a fall protection system on an ongoing basis. The Z359.2 is the Managed Fall Protection standard that speaks to fall protection training and the qualifications and experience of the trainer. A qualified trainer in Competent Person, Qualified Person, Authorized Person and Competent Rescuer are the levels of certification.

Authorized Persons and Competent Persons may select non-certified anchorages at 5,000 lbs per person. Qualified Persons may select anchorages at 3,600 lbs minimum. Only Qualified Persons may select anchorages for horizontal lifeline systems.

The benefit of the new standards is that they:

Provide increased coverage of Fall Protection equipment and systems

Provide upgraded requirements for snaphooks with stronger gates.

Provide minimum training requirements for the management of a fall protection program

The Hierarchy of Fall Protection includes eliminating fall hazards, passive fall protection, fall restraint, fall arrest and administrative controls. Designs which eliminate fall hazards through the proper application of the hierarchy of safety controls are the preferred method for fall protection.

Basic fall safety principles have been incorporated into this standard, including hazard survey, hazard elimination and control, and education and training. The primary intent is to ensure a proactive approach to fall protection. However, the reactive process of accident investigation is also addressed to ensure that adequate attention is given to causation of falls.

Developing and implementing a comprehensive managed fall protection program is the most effective method to: identify, evaluate, and eliminate (or control) fall hazards through planning; ensure proper training of personnel exposed to fall hazards; ensure proper installation and use of fall protection and rescue systems; and implement safe fall protection and rescue procedures.

## **Policy Statement**

Employers shall develop and implement a policy statement that provides general goals and guidance for a managed fall protection program and emphasizes management's commitment to providing a safe workplace for employees exposed to fall hazards.

A program administrator is responsible for the development, implementation, and monitoring, and evaluation of the managed fall protection program.

The qualified person shall be responsible for supporting the fall protection program. Areas of expertise may include system design, horizontal lifeline design, structural analysis, calculation of impact forces and clearances, testing, anchorage certification, methods of control, equipment selection, and compliance with applicable regulations and standards.

The competent person shall be responsible for the immediate supervision, implementation and monitoring of the managed fall protection program. The competent person shall prepare, update, review and approve written fall protection procedures as directed by the program administrator. The competent person shall review the procedures as workplace activities change to determine if additional practices, procedures, or training need to be implemented before workplace activities continue. The competent person shall ensure a written rescue plan has been developed.

The competent person shall specify in written fall protection procedures the fall protection systems, including anchorage locations, connecting means, body supports, and other fall protection equipment that authorized persons are required to use when they are exposed to a fall hazard. The competent person shall ensure a written rescue plan has been developed.

The authorized person shall bring to the competent person's attention all unsafe or hazardous conditions or actions that may cause injury to either themselves or any other authorized person before proceeding with their workplace activities. Where fall protection is required, the authorized person shall have a working understanding of and follow the employer's policy and

procedures and the instructions of the competent person regarding the use of fall protection and rescue systems.

The competent rescuer shall anticipate the foreseeable potential for planned rescue and develop rescue procedures and methods accordingly before the authorized persons start their workplace activities at heights.

The authorized rescuer shall through experience and training have a working knowledge of and experience in the selection, use, storage and care of all equipment necessary to perform a rescue.

The qualified person trainer shall have a working knowledge of applicable fall protection regulations, standards, fall protection equipment and systems, physical sciences, and engineering principles.

The competent person trainer shall have a working knowledge of applicable fall protection regulations, standards, equipment and systems.

The competent rescue trainer shall through experience and training have a working knowledge of applicable fall protection and rescue regulations, standards, equipment and systems. The competent rescue trainer shall evaluate the circumstances and conditions under which rescue may be required and provide training that is appropriate to those circumstances and conditions.

Trainers shall develop a fall protection training guide, specific to identified fall hazards, which includes:

- training outline, including timeline
- learning objectives
- pre-requisites (if any)
- required training aids (manuals, equipment, audio/visual, physical environment)
- student to instructor ratio
- methods of evaluation
- minimum performance requirements of students.

The documentation for training and evaluations shall include at least the following information:

- trainer's or evaluator's name
- student's name
- training or evaluating organization's name (if services are provided by an external organization)
- dates and times of training or evaluations
- course objectives and content of education program
- performance of student based upon observation of physical demonstrations of skill.

Written fall protection procedures for fall arrest systems shall include:

- identification of acceptable fall arrest anchorages
- clearance requirements
- complete setup procedure for access, use and egress from the system
- limitations on use of the system, including the maximum free fall, maximum arrest force
- the maximum number and permitted locations of authorized persons who may attach to or use the system.

It is preferred that all fall anchorages be designed or selected by a qualified person. However, the standard recognizes that this may be impractical in some situations. This standard provides that a competent person may supervise the selection, installation, use or inspection of non-certified anchorages.

Architects and engineers should be aware that every area of a building, structure, roof, equipment, machinery, amusement park, and facility of any type will require maintenance or repair work at some point. Control measures should be incorporated into the design phase to eliminate and control the need to work at heights and minimize the exposure to fall hazards. The following should be considered:

- reducing the risk when working at heights through use of the Fall Protection Hierarchy
- reducing the need to work at heights as much as possible by prefabricating modules on the ground before lifting them into position where feasible
- pre-planning the building and the access road leading to the building, the site, or facility.

The selection, use and inspection of non-certified fall arrest anchorages may be supervised by a competent person.

The standard will allow a qualified person to design or certify a fall arrest anchorage that has a safety factor of 2.0 against failure. Qualified persons should also verify that the design loads meet jurisdictional requirements. The impact of fall forces on beams, columns and their supports other than anchorages are not addressed by this standard. Structural evaluation and analysis of beams, columns and their supports are addressed by the International Building Code (IBC), which many jurisdictions have adopted as a regulation. Under the IBC, a professional engineer is typically required to evaluate and analyze the structural integrity of beams and columns impacted by fall forces. Caution should be exercised when selecting and using anchorages especially for older buildings and structures so that other structural members will have sufficient capacity to sustain fall arrest anchorage forces without any failure.

Anchorage for horizontal lifeline systems shall be certified and designed, prior to use, by a qualified person with experience and training in designing and using horizontal lifeline systems.

Fall protection equipment shall be inspected by the authorized person at least once at the beginning of each eight-hour shift in which it is used to verify that it has not sustained any wear or damage that would require its removal from service.

**In-House Rescue Service.** Where outside professional rescue agencies cannot be relied upon to promptly rescue a fallen authorized person, the employer's program administrator shall establish training for their own employees, or a selected group of employees as authorized rescuers or competent rescuers, to safely and promptly rescue a fallen authorized person. The rescue procedures shall include:

1. A description of all equipment to be used by the rescue team, specifying the applicable manufacturers.
2. Complete instructions for performing the rescue safely and promptly.

All fall-related incidents shall be reported to the program administrator and competent person. All incidents shall be investigated promptly. An incident investigation shall consider all factors that contributed to the event including but not limited to a review of policies, procedures, training, the fall hazard survey, equipment and related systems and general communication. Any activity

affecting the equipment or site involved in the incident shall cease and the site and equipment secured until the investigator permits activity to resume.

## **Summary**

These new standards will help clarify the recognition of fall hazards and provide for a range of solutions by properly qualified people under the direction of a program administrator along with organized training of key people in the organization's fall protection program.