

## **Making the Most of Your Fall Protection Program**

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### **Introduction**

When fall protection issues are properly addressed, the result is increased safety and reduced risk. To be effective, fall protection programs must strike a balance between cost efficiency, compliance, safety, and usability.

Since major fall protection incidents don't happen often, it's easy for an organization to be lulled into a false sense of security. But managing the major risks presented by falls is a smart and ethical business investment, in addition to a legal requirement.

This paper will cover the necessary elements of an effective fall protection program. Even if a program appears successful—due to low incident or injury rates—this paper provides a “reality check” to challenge the status quo and discover ways to improve.

An effective safety program is framed around the following core elements. This paper offers best practices for each element, based on current guidance provided by the ANSI Z359 family of standards (ANSI/ASSE 2013):

- Management leadership and employee participation
- Hazard identification and evaluation
- Hazard abatement
- Training
- Program evaluation

### **Management Leadership and Employee Participation**

Both management leadership and employee participation are critical to a successful program. When the top of the organization endorses and supports a fall protection program, the appropriate authority, time, and budget are allotted to develop it effectively.

One of the most impactful ways that management can support a fall protection program is through the designation of key roles and responsibilities, including the following critical functions:

- Fall protection program administrator: Manages/champions program
- Qualified person: Designs fall protection systems
- Competent person: Supervises program and users
- Authorized person: Uses fall protection

The second piece, which is just as critical, involves the employees at a given site who are exposed to fall hazards. They need to support the program and be given the appropriate information and communication channels to allow them to actively engage with the program. Some examples of employee participation include special safety days, safety bulletins, suggestion programs, recognition programs, and involvement in abatement projects.

This core element is woven throughout your organization at a cultural level. When both management and staff are engaged in the fall protection program, an emphasis on safe work at heights permeates the organization.

## **Hazard Identification and Evaluation**

The ultimate goal of a fall protection program is to create a safer environment for workers. But until all the hazards are identified, it is difficult to develop an effective strategy to reduce risk. Being able to identify all fall hazards, quantify all risks, and use that data to create an actionable abatement plan allows an organization to systematically reduce risk and save money in the long term.

To identify hazards and potential solutions, it's critical to understand work tasks and worker behavior. Through worker interviews, an organization can collect objective feedback on key aspects that contribute to fall hazards: means of access, work locations, and job tasks.

The more efficiently risk is reduced, the better. So, rather than devoting resources to the most obvious hazards, organizations can conduct a comprehensive fall hazard risk assessment to systematically identify, evaluate and control fall hazards. By directing the budget to the highest risk items, organizations can achieve maximum risk reduction for the investment made.

Organizations often abate hazards as they're noticed or when they are identified during a job hazard analysis (JHA). But will this method reduce risk as quickly as budget allows? Is it likely that you will be able to implement the optimal solution without sacrificing budget and productivity?

During a comprehensive fall hazard risk assessment, detailed data is gathered on all fall hazards. The data is analyzed to determine the probability and severity presented by each hazard. In terms of probability, a variety of factors must be considered: frequency of task, exposure time, number of workers exposed, and likelihood of falls based on external influences. The severity is measured by determining fall distance, and likely obstructions impacted during a fall.

The resulting data is then organized into a prioritized list of hazards. This list can be organized by location, maintenance task, and type of solution proposed—or in any other way that helps the organization manage abatements. Once fall hazards and the potential risks associated with them are identified, evaluated, and ranked, leadership can use the information to create a validated budget, schedule and abatement strategy.

Since organizations may not be able to address every hazard, the prioritized list provides guidance on what, when, and how to abate hazards. This risk assessment method transforms an overwhelming list of hazards into a manageable plan, with a beginning and an end point. Program managers can use this information to report metrics on the amount of risk reduced for a given investment.

Many times, however, risk assessments are conducted using a simple risk matrix similar to the one in Exhibit 1. Unfortunately—especially for locations with hundreds or thousands of hazards—the information gained from this type of assessment is not granular enough to be effective in long-term planning. Often, dozens of hazards will fall into one category, giving the program manager no indication of which hazards to abate first.

HAZARD PROBABILITY					
HAZARD SEVERITY		Frequently (A)	Probably (B)	Potential (C)	Unlikely (D)
	Fatal - Cat. IV	1	1	2	3
	TTD - Cat. III	1	2	3	4
	Minor Injury - Cat. II	2	3	4	5
	Violation Cat. I	3	4	5	5

**Exhibit 1: This table shows a simple risk matrix.**

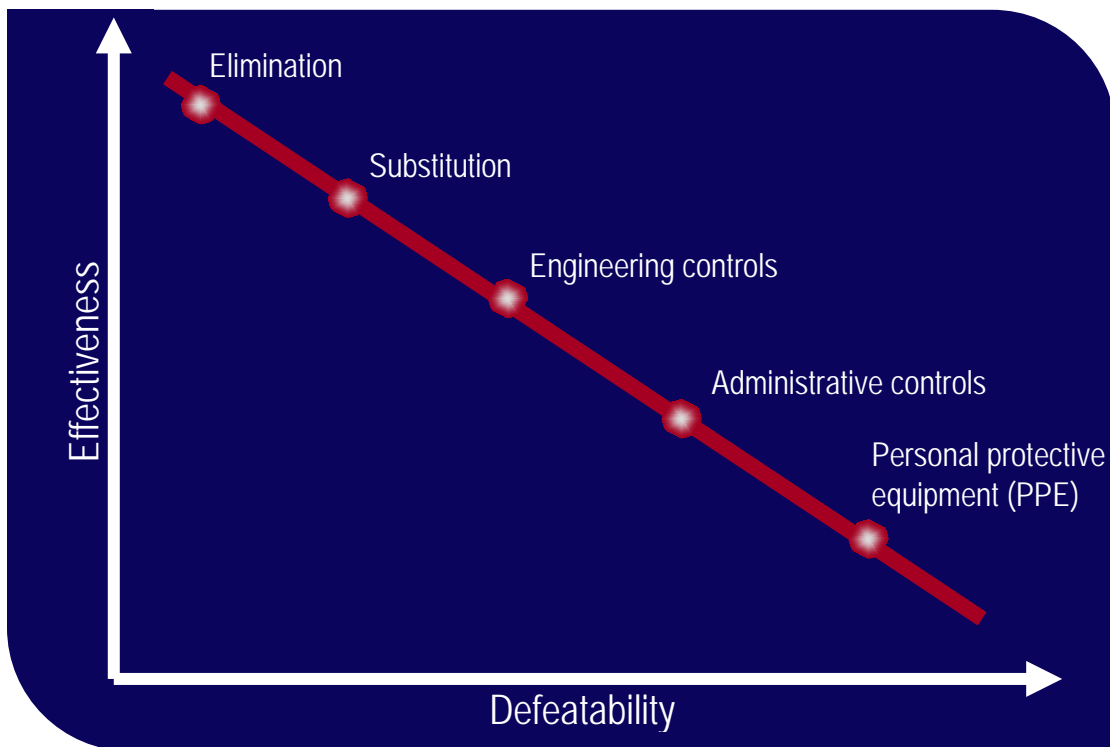
## Hazard Abatement

Selecting and implementing fall protection solutions are the most visible aspects of a fall protection program. They are also the most costly. So, during the abatement phase, you have the most to lose. You lose time, money, safety, and productivity when you implement the wrong solutions.

When selecting abatement solutions, guidance should be taken from the *hierarchy of controls*. This widely accepted strategy measures the effectiveness and defeatability of hazard abatement methods. To reduce the most risk, organizations should favor elimination, substitution, and engineering control solutions. With engineering controls, employees have to actively overcome barriers to put themselves at risk. On the other hand, personal protective equipment (PPE) is the least effective and most defeatable solution and, therefore, holds the lowest position in the hierarchy, as shown in Exhibit 2. Put another way, PPE solutions are so easy to overcome that they leave an organization with significant residual risk. Using PPE-based solutions means you haven't removed the workers from the hazard or the hazard from the workers.

Some potential concerns with equipment-based or PPE solutions include:

- Inadequate anchorage
- Inadequate fall clearance
- Equipment misuse
- Incompatible components
- Lack of procedures
- Improper training



**Exhibit 2: This graphic shows the hierarchy of control for fall protection.**

When selecting abatement options, many factors must be considered. Ideally, the solution that presents the greatest level of safety will be selected, but that is not always feasible. Organizations also need to consider more than just short-term costs when evaluating their abatement options, since the long-term costs and productivity effects could nullify any short-term cost savings.

The primary aspects to consider when evaluating abatement options include:

- Safety
- Productivity
- Short-term cost
- Recurring cost
- Ease of use
- Aesthetics (in some cases)

Still, well-planned and properly designed fall protection systems can only function if they are installed and used properly. Organizations that engage trained professionals to certify the entire process—from initial planning through construction to final close-out—dramatically increase the reliability of installed fall protection systems.

Competent persons and users of the systems may tout that their equipment meets the latest ANSI Z359 standards, but they can't typically confirm that the whole system meets the standards. Documentation must show that the system is fit for service and that workers can use it safely.

There are four primary elements to consider when certifying a fall protection system. Each of the fundamentals listed below must be evaluated to ensure that all aspects of a given system are acceptable for use:

1. Suitability of system
2. Anchorages
3. Equipment
4. Procedures and training

The certification process is especially important for fall protection systems, since properly functioning systems can mean the difference between life and death. And no matter how old a fall protection system is, its sole purpose is to save a falling worker. Therefore, it is also critical to have active systems recertified regularly. Changes in personnel and environments, which happen in every workplace, can render active systems ineffective and unsafe. As circumstances and environmental conditions change, organizations must confirm that the systems' application and components are still viable for their intended purpose.

## **Training**

Only well-informed individuals can make the right decisions about fall protection. That's why it is critical to ensure proper training for the people who supervise or use fall protection systems.

The goal of fall protection training is to change behavior. To truly impact a safety program, training needs to include more than just instruction on regulations and equipment use. Participants need the skills and tools to solve fall protection issues before they arise, so they don't rely on less effective, reactive approaches in the field.

Adult learners have a variety of learning preferences, so it is important to use a variety of teaching methods. Combining lecture, multi-media applications and hands-on exercises increases

ownership, understanding and retention of critical material. Participants also grasp training content best when it's adapted to the fall hazards they confront daily.

Because different employees have different responsibilities related to fall protection, there are various levels of fall protection training to consider. The ANSI Z359.2 standard outlines the following levels of training, including required training content, for each type of training (ANSI/ASSE 2013).

- Awareness – understanding of risk and general program needs
- Authorized Person – system and equipment use and limitations
- Competent Person – system implementation and monitoring
- Qualified Person – system planning and design
- Refresher training at each level – required to keep skills fresh

Regular, ongoing training will also support the other major elements of a fall protection program and increase the effectiveness of each step.

## **Program Evaluation**

The last core element is program evaluation. This step examines how the overall program is functioning taking into consideration such items as incident reports, statistics for the site, training records, abatement of identified hazards, observations of system use, and compliance with regulations.

Determining whether your program incorporates changes in fall protection regulations and standards should be part of your program evaluation. An example of this would be to evaluate whether your equipment specifications and purchasing have been updated to ensure that your energy-absorbing lanyards meet the increased snaphook gate strength from the ANSI Z359.1-2007 update (ANSI/ASSE 2013).

A review of training records and content can assist you in evaluating whether the individuals who have been identified for training have received proper instruction. It is key to ensure that all individuals who are using a specific fall protection system have received both general authorized person training, and system specific training. Observations of system use should be conducted periodically to ensure that employees are using the system as intended, and based on the system specific training. Incorrect use indicates that retraining is required.

Inspection records for both personal fall protection equipment and overall systems should be periodically audited to verify that inspection records are being completed properly. Inadequacies indicate the need for refresher training.

Organizations with a mature fall protection program will often have a fall protection equipment list that has been approved by the fall protection committee and/or the program administrator. These organizations will also require receipt of as-built drawings for all systems installed and ensure each system is a certified system meeting the requirements previously discussed. A goal of fall hazard programs should be to prevent the introduction of new fall hazards.

The last program evaluation item is one that all organizations aspire never to have to conduct; an incident investigation. If one does occur, it needs to be documented, the equipment involved in the fall needs to be inspected and/or discarded, and the procedures and training should be reviewed for necessary updates. In addition, the communication process should be fully evaluated to determine areas for improvement. For example, whether rescue personnel arrived in a timely manner, if needed.

## **Conclusion**

When fall protection issues are properly addressed, the result is increased safety and reduced risk. To be effective, fall protection programs must strike a balance between cost efficiency, compliance, safety and usability.

## **Bibliography**

American National Standards Institute/American Society of Safety Engineers. 2013. Z359, *Fall Protection Code*. Des Plaines, IL: ASSE.