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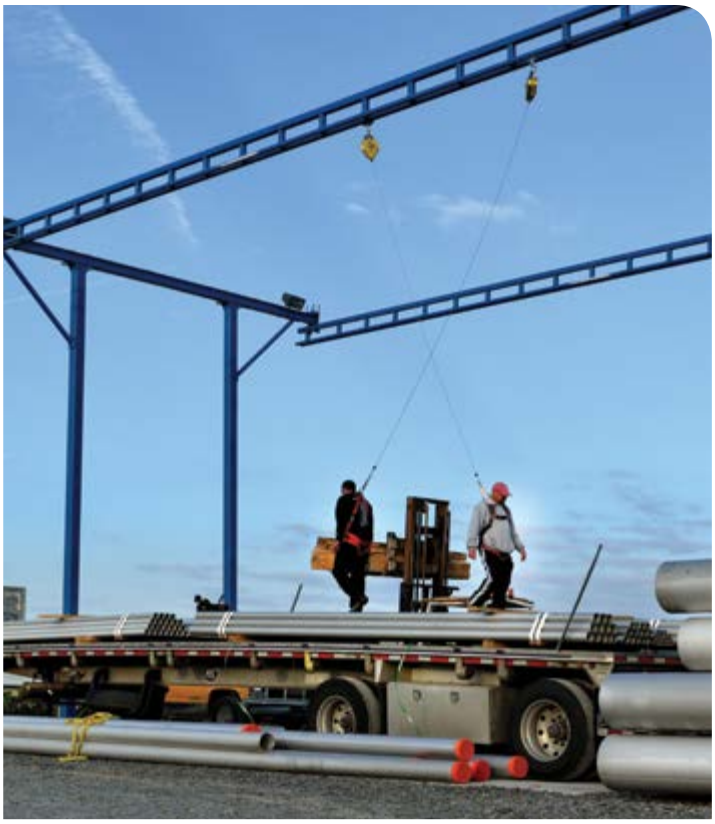
FALL PROTECTION SYSTEMS

PLAN
PREVENT
PROTECT



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The fall protection plan guidance you need to keep your company compliant

Falls are by far one of the most common workplace hazards tracked by federal regulatory agencies and insurance companies. That's why it's so important to have a comprehensive fall protection plan in place. A good plan will not only help protect your workers from injury or death, but your company from fines, litigation, or worse. Inside this resource, you'll find helpful tips, recommendations and regulatory guidelines to keep in mind when you build or upgrade your site-specific fall protection plan.

What is a fall protection plan?

A fall protection plan is a document that clearly establishes guidelines to protect all employees engaged in indoor and outdoor activities that expose them to falls from elevations of four feet or greater. The plan should document all onsite fall hazards along with protocols for addressing each one. Even in cases where standard operating procedures and safe-work practices can eliminate a fall hazard, it should be documented in your plan.

When fall hazard elimination is not feasible, the plan should clearly state the type of fall protection measures that will be used, how they should be used, and who is responsible for overall supervision and training. Additionally, the plan should outline the steps to be taken in the event of an accident. It's important to note that your plan is a dynamic, ongoing initiative and should be continuously updated as fall protection and fall arrest technologies evolve.

Why is it important?

A fall protection plan is an essential tool for ensuring the safety and health of your employees—and your company. According to the Bureau of Labor Statistics, in 2009 alone, over 600 workers died and another 200,000 were seriously injured in fall-related incidents. The financial burden associated with fall injuries is high as well, with worker's compensation and medical costs estimated at $70 billion in 2002.* When you factor in other issues such as litigation and OSHA fines, the financial toll of not having a plan can be devastating.

*CDC Reference: NSC (2002) Report on injuries in America 2002. Itasca, IL: National Safety Council.

OSHA regulations and ANSI standards.

As an employer responsible for employees working in elevated environments, you have two sets of guidelines to adhere to: OSHA regulations and ANSI standards. Failure to adhere to OSHA regulations can result in financial penalties or sanctions. Failure to adhere to ANSI standards may expose you to additional litigation.

OSHA Regulations

OSHA regulation 1926, Subpart M for construction and regulation; 1910, Subparts D and F for general industry, require fall protection as follows:

- 4' in general industry
- 5' in shipyards
- 6' in construction industry
- 8' in longshoring applications
- Any height when working with dangerous equipment and machinery

ANSI Standards

ANSI/ASSE Z359 is the national voluntary consensus fall protection equipment criteria for general industry. It encompasses many different standards, including those for Personal Fall Arrest Systems, Subsystems and Components (ANSI Z359.1), and is considered a benchmark standard that should be incorporated into every industrial fall protection program. Other helpful standards include:

ANSI/ASSE Z359.0-2012
Definitions and Nomenclature Used for Fall Protection and Fall Arrest

ANSI/ASSE Z359.1-2007
Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components

ANSI/ASSE Z359.2-2007
Minimum Requirements for a Comprehensive Managed Fall Protection Program

ANSI/ASSE Z359.3-2007
Safety Requirements for Positioning and Travel Restraint Systems

ANSI/ASSE Z359.4-2007
Safety Requirements for Assisted-Rescue and Self-Rescue Systems, Subsystems and Components

ANSI/ASSE Z359.6-2009
Specifications and Design Requirements for Active Fall Protection Systems

ANSI/ASSE Z359.7-2011
Qualification and Verification Testing of Fall Protection Products

ANSI/ASSE Z359.12-2009
Connecting Components for Personal Fall Arrest System

ANSI/ASSE Z359.13-2009
Personal Energy Absorbers and Energy Absorbing Lanyards

ANSI/ASSE Z359.14-2012
Safety Requirements for Self-Retracting Devices for Personal Fall Arrest and Rescue Systems

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The components of a fall protection plan

It is considered best practice to develop a specific fall protection plan for every worksite. The plan should include the following:

DEFINE
the scope of your fall protection program

IDENTIFY
all work area fall hazards

DETERMINE
appropriate methods of protection:
eliminate, prevent, control

CONDUCT
extensive employee education
and training

PERFORM
inspection and maintenance
of fall arrest equipment

ADMINISTER AND AUDIT
the program for compliance and
continuous improvement

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Your fall arrest plan checklist

If the need for a fall arrest system is identified, we recommend the following steps:

- ☐ 1. Survey, identify and analyze fall hazards
- ☐ 2. Classify hazards
- ☐ 3. Determine the need for an engineered system
- ☐ 4. Consult with outside specialists (if needed)
- ☐ 5. Specify system requirements
- ☐ 6. Draft a corporate policy
- ☐ 7. Specify training and procedures
- ☐ 8. Install selected fall protection system
- ☐ 9. Train workforce and supervisors
- ☐ 10. Schedule inspections and maintenance

Who is responsible for your fall protection plan?

It is the employer's responsibility to develop, implement and maintain a compliant fall protection plan. Before you begin to outline your plan, it is important to assign a person within your organization who has the training to properly determine what constitutes a fall hazard. Additionally, OSHA identifies two types of people who should execute the steps that constitute your fall protection plan. In general industry, these terms are defined by OSHA* as:

COMPETENT PERSON—a person who is capable of identifying hazardous or dangerous conditions in the personal fall arrest system or any component thereof, as well as in their application and use of related equipment.

*OSHA 29 CFR Part 1910

QUALIFIED PERSON—a person with a recognized degree or professional certificate and extensive knowledge and experience in the subject field who is capable of design, analysis, evaluation and developing specifications in the subject work, project or product.

The specific qualifications of a competent person include the ability to:

- Identify hazardous or dangerous conditions
- Establish controls on identified fall hazards
- Select, inspect, use, store and maintain personal fall protection equipment
- Take prompt corrective measures to control fall hazards and unsafe equipment
- Train workers at risk of falling in accordance with standards and regulations
- Maintain a working knowledge of OSHA and ANSI regulations
- Inspect fall arrest systems and recognize when they should be taken out of use

Competent Person training is offered through a variety of online sources. The variety and quality of training can be broad, so be sure to look for references and opportunities for hands-on training. Once someone has completed the training, they can examine your facility for potential fall hazards.

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Identifying fall hazards

According to OSHA, any time a worker is occupied at a height of four feet or greater, a fall hazard exists. As stated earlier, when a hazard can be eliminated, it is the employer's obligation to do so either by changing procedures, redesigning the work environment, or using passive fall protection (e.g., guardrails, handrails, etc.).

When this is not possible, use of a personal fall protection system such as restraint or fall arrest may be required. Use this brief checklist to determine if fall arrest is right for you:

Work is performed: ☐ indoors ☐ outdoors

Identification of fall hazards (check boxes):

☐ Working surfaces at elevations of:
____ 4' ____ 5' ____ 6' ____ 8' plus

☐ Unprotected sides or edges ☐ Leading edges

☐ Holes ☐ Ramp, runways and other walkways

☐ Excavations ☐ Dangerous equipment

☐ Wall openings ☐ Other

Type of surface _____

Frequency of task _____

Task requires: ☐ vertical movement ☐ horizontal movement

Number of workers exposed to a fall hazard _____

Approximate distance from the surface to lower levels _____

Can the fall hazard be eliminated or prevented by:

Process change? ☐ yes ☐ no

Working in a guarded area, utilizing guardrails or gates? ☐ yes ☐ no

Using a fall restraint system? ☐ yes ☐ no

If you answered "no" to all of these questions, a pre-engineered fall arrest system is required. If so, please answer the following two questions:

Are there overhead obstructions? ☐ yes ☐ no

Are there floor obstructions? ☐ yes ☐ no

Yes, I do need a fall arrest system. Now what?

Once you have determined a need for a fall arrest system, the first thing you should do is contact Gorbel—a recognized leader in overhead materials handling and fall arrest systems. Our engineers and fall protection trainers have the expertise to match your needs. Available in multiple configurations, including various track profiles and support center distances, fall protection systems can be easily customized to fit every budget and application.

The next step is to add fall protection to your company's overall health and safety plan. A written site-specific program should be developed, including detailed work procedures to protect your employees. The fall protection portion of your plan should state what fall protection measures are to be used, how they are to be used, a rescue plan, as well as the individual responsible for overall supervision and training.

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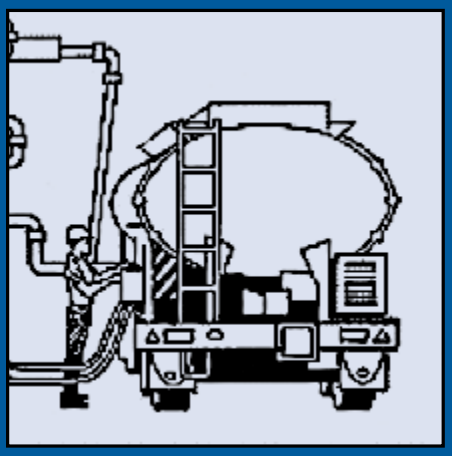
Choosing the right fall protection products

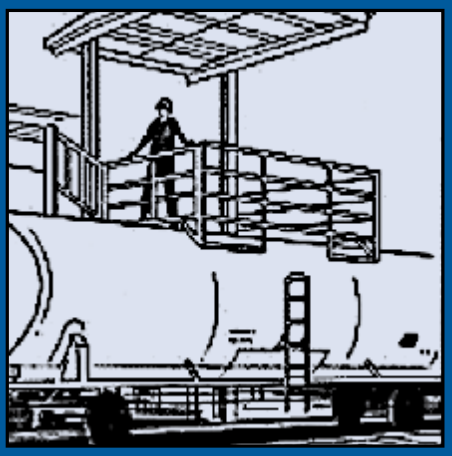
In order to provide proper fall protection for your workforce, it's important to have a clear understanding of the types of products available. And because the technology is continuously evolving, we recommend tasking a team member with the responsibility of monitoring the category to ensure you stay up to date. It's also a good idea to schedule formal audits of your fall arrest or restraint systems and procedures.

Once all of your fall hazards and the appropriate equipment have been specified, be sure it is reflected in your fall protection plan. The plan should identify all fall prevention and protection measures as stated above, as well as a rescue plan in the event of a fall.

Change work procedures or redesign your environment.

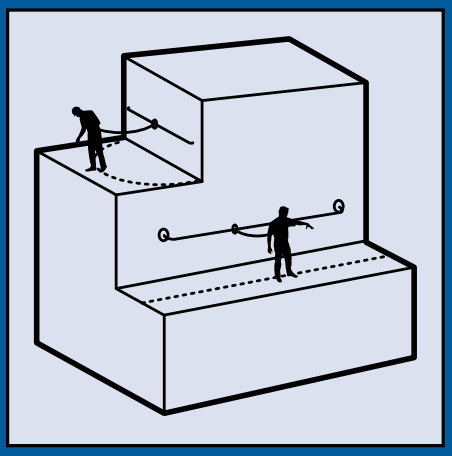


ELIMINATE
Move work to ground level.



PREVENT
Work in a guarded area, utilizing products such as handrails, safety gates, guardrails and rooftop railings.

Deploy a fall protection system.



RESTRAIN
Restrain worker by fitting them in a harness with a tether attached. A fixed-length lanyard is then attached to the D-ring on the harness, and then to a code-compliant anchorage system.

ARREST
Utilize a professionally engineered fall arrest system—ideally one that is custom-designed for your specific work environment. Proper fall arrest includes three key components: anchorage, body harness, and connecting device.

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CEILING MOUNTED MONORAIL SYSTEMS

- Provide mobility along a single axis for applications when workers need to travel in a straight line

FREE STANDING MONORAIL SYSTEMS

- Provide free standing support when building structure is inadequate for ceiling mounted applications

BRIDGE SYSTEMS

- Two runways and a traveling bridge for maximum coverage within a rectangular work area
- Lightweight aluminum bridge follows the worker, remaining directly overhead

SWING ARM SYSTEMS

- Semicircular fall protection with a compact footprint
- Swing arm can be moved out of the way when not in use

FOLD AWAY SYSTEMS

- Deploy as needed, then fold away when done
- Wall mounted/column mounted or free standing designs

SINGLE POLE SYSTEMS

- Space-saving design allows for installation in areas where there is minimal space or limited room for foundations
- Utilizes only one free standing support with one single foundation

The MTA steps up fall protection

The Maryland Transit Administration (MTA) is one of the largest multimodal transit systems in the United States. The light rail system is among the MTA's largest components. In 2011, MTA's light rail trains carried more than 8.6 million passengers and averaged 27,000 passengers a day. Keeping the 53 light rail trains the MTA utilizes in perfect running condition requires a three-shift operation with more than 45 workers.

Michael Ollinger, Deputy Director, Light Rail Operations for the MTA, is responsible for helping keep those workers safe. One area where he has made improvements is fall protection for workers who repair and maintain the trains' rooftop components. The light rail trains are serviced in a massive facility where workers navigate the trains' rooftops for three to five repairs and eight to 10 inspections a day.

"We have a high bay area in the maintenance facility where we service the trains, and at one time we used a large scaffold to protect the workers. It was about 50 ft. long, 12 ft. tall and on wheels so we could position it where it was needed," said Ollinger. "However, as you can imagine, it was unwieldy and needed to be moved a lot."

To improve things, Ollinger and his team worked with an outside consultant who performed a full evaluation and ultimately recommended a Gorbel Tether Track™ Fold Away Fall Arrest System. The team also developed a standard operating procedure that outlines proper use and procedures, from inspecting and checking out harnesses to a rescue procedure in the event a worker falls. Additionally, all the MTA staff who work on the trains and use the system must attend a comprehensive session as part of their initial training. Supervisors on site continually keep a close watch and perform equipment inspections on a daily and weekly basis.

"The Gorbel Tether Track Fall Arrest System we have in place now is safer and saves a lot of time," said Ollinger. "And, I'm 100% certain that no one misses that scaffold."

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Training

An overview of your training objectives is required in every fall protection plan. Keep in mind that, according to federal regulations, all workers must be trained in the use of your fall protection products and systems. Live, hands-on training is essential to help understand the capabilities and limitations of personal protection equipment. Training promotes confidence and should be conducted as an initial introduction and repeated periodically. Manufacturers' user instructions and warnings should also be reviewed and understood by all employees. According to the International Safety Equipment Association (ISEA), properly trained workers must be able to:

- Identify potential fall hazards
- Determine which products to use in specific work environments
- Demonstrate proper anchoring procedures
- Inspect and maintain fall protection equipment
- Demonstrate procedures and the proper wearing of fall protection equipment

For an additional listing of suggested training objectives, please refer to ISEA Use and Selection Guide: Personal Fall Protection Equipment.

Developing a fall protection rescue plan

Regardless of how thorough your fall protection plan is, or how diligent your training and safety protocols may be, falls may happen at your workplace, and it's important to be prepared with a clearly defined rescue plan.

Keep in mind that rescue plans don't have to be complicated—just fast and effective, as suspension trauma and other injuries can occur in as little as 20 minutes. Even if your rescue plan involves simple equipment such as a portable ladder or manual descent device, ANSI protocols require it be written into your fall arrest plan and practiced by trained personnel.

BEFORE YOU WRITE YOUR PLAN, WE SUGGEST ANSWERING THESE FOUR QUESTIONS:

1. Who will be executing your rescue plan?
2. Where will the rescue take place?
3. What kind of equipment is needed?
4. What are your rescue options for this area?

ADDITIONALLY, THE FOLLOWING SHOULD BE WRITTEN INTO YOUR PLAN:

- Types of rescue equipment available to workers
- Locations of any rescue line anchor points for rope rescue
- How to attach retrieval or lowering lines to a fallen worker's harness
- Specifics about training required to perform rescue work
- Other site-specific details needed for a safe and successful rescue

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Ongoing inspections and maintenance

The final step in the process is ongoing inspections of fall arrest equipment. OSHA requires a visual inspection for wear and damage prior to each use, mandating that any deterioration or defective components be removed from service. According to ANSI, fall protection equipment should be inspected by the user before each use and inspected at least once a year by a "competent person." Any extreme conditions that may have occurred since the last maintenance procedure, including a fall event, should be reported to the proper supervisor and an evaluation made to determine if the maintenance schedule requires modification.

Additionally, a "competent person" is required to verify that any and all system maintenance is performed properly. Be sure to note and report any "extreme conditions," such as a fall arrest event, vibration or swaying of the support system, or an impact to the system. When such a condition occurs a determination should be made as to whether or not a modification to the maintenance schedule should be made. Finally, an inspection and maintenance schedule document should be created and made available to your workforce.

How to keep your plan up to date

Keep in mind that your plan is not a one-time effort, but rather an ongoing, continually evolving program. Due to rapid advancements in technologies and changes in regulatory standards, we recommend that you regularly monitor the following websites to ensure your plan is up to date:

www.osha.gov/SLTC/fallprotection/standards.html

www.ansi.org

www.osha.gov/Region7/fallprotection/fall_protection_info.html

How Gorbel can help

We hope the information contained in this resource gives you the tools you need to begin creating your fall protection plan.

For additional help with the fall arrest portion of your fall protection plan, including requesting a free Onsite Consultation, contact a Gorbel representative at **800-821-0086.**

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Notes: