

# **Preventing Falls from Equipment and Bridges**

# Written Fall Protection Program

**Key issues to be discussed within this section include:**

1. Purpose of the written program.
2. What the program should address.
3. Sample fall protection program “Table of Contents.”
4. Writing the Fall Protection Program.

## **Fall Protection Program**

Employers must provide fall protection for everyone on the job and make sure all walking and working surfaces will safely support the employees. The first step in providing fall protection and complying with the standard is the development and communication of a fall protection program.

The areas that the program should address include, but are not limited to:

1. Management's commitment, leadership and employee involvement;
2. Work site analysis;
3. Hazard prevention and control;
4. Safety and health training;
5. Accident/incident investigation;
6. Enforcement.

The purpose of the program is to identify, manage and control the fall hazards by eliminating them with fall prevention methods. When this is not possible, contractors must install or provide fall protection systems to guard against falls from elevation. This written program needs to address how the employer will manage and control the existing fall hazards. Possible hazards include holes, leading edges, open-sided floors and elevated platforms. The written program can be very detailed or rather simple and direct, depending on the contractors' needs. Here is a sample table of contents for a detailed written program:

## **I. Introduction**

- A. Purpose
- B. Scope

## **II. Safety Goals and Objectives**

- A. Management
- B. Supervision
- C. Employees

## **III. Responsibilities**

- A. President/CEO
- B. Safety personnel
- C. Field managers
- D. Construction workforce

## **IV. Accountability and Enforcement**

- A. Accountability measures
- B. Enforcement policy

## **V. Hazard Identification and Elimination**

- A. Job site inspections
- B. Analyzing the work area
- C. Job Hazard analysis
- D. Pre-planning for fall prevention/protection

## **VI. Fall Prevention**

- A. Engineering controls
- B. Alternate work methods

## **VII. Conventional Fall Protection**

- A. Guardrails
- B. Safety nets
- C. Hole Covers
- D. Personal fall protection systems

## **VIII. Specialized Fall Protection**

- A. Controlled access zone
- B. Warning line system
- C. Safety monitor system
- D. Fall protection plans

## **IX. Application of Fall Protection Systems**

- A. Conventional systems
- B. Specialized systems

**X. Inspection, Storage and Maintenance of Fall Protection Systems**

- A. Conventional systems
- B. Specialized systems

**XI. Training**

- A. Competent person trainer requirements/responsibilities
- B. Documentation requirements
- C. Employee selection

**XII. Rescue Procedures**

- A. Rescue methods/options of fallen personnel
- B. Communication issues
- C. Coordination of off-site EMS

**XIII. Accident/Incident Investigation**

- A. Conducting the investigation
- B. Documentation
- C. Interviews
- D. Reporting requirements

**XIV. Program Evaluation**

- A. Accident/incident reports
- B. Medical reports
- C. Incident rates
- D. Management/employee compliance
- E. Industry comparison

## Writing the Fall Protection Program

The following is an outline contractors can follow to develop a written program:

### I. INTRODUCTION

**Purpose** - The purpose statement explains exactly what the contractor is striving to achieve in regards to the program, in other words their goal.

#### EXAMPLE:

To prevent work related injuries resulting from falls from elevations. The prevention of these incidents will be accomplished by the use of fall prevention and fall protection methods, the training of affected employees and proper enforcement by all field management staff.

**Scope** - The scope is simply the area that will be covered by this written program.

#### EXAMPLE:

This policy applies to all company employees working on any construction site and who may be exposed to fall hazards in the course of their daily activities. This program also applies to non-site personnel, visitors and any individual on site exposed to a fall hazard.

### II. SAFETY GOALS AND OBJECTIVES

**Management** - Explain in this section specifically what management goals may be.

#### EXAMPLE:

The goal of management is to drastically reduce, and eventually eliminate, the occurrences of falls from elevation in the construction of our projects. Through effective administration, cost controls, enforcement and evaluation of related incidents, management will continually modify the fall protection measures until these injuries are eliminated.

**Supervision** - Explain in this section what the goals of supervisory personnel will be.

#### EXAMPLE:

The goal of the supervisory personnel will be complete compliance with a company's fall protection program, enforcement of these requirements, hazard identification, hazard mitigation and providing adequate training for all field personnel. By striving for effective training, compliance and hazard mitigation these injuries will be controlled.

**Employees** - Explain in this section what the goals of the employees will be.

EXAMPLE:

1. Employees will be able to identify the fall hazards on the job site.
2. Employees will have the training to work safely in hazardous areas.
3. Employees will be able to understand the hazards associated with working near fall hazards.
4. Employees will understand what the companies policies are relating to fall protection.

**III. RESPONSIBILITIES**

*President/CEO* - What will the presidents responsibilities be in regards to the program.

EXAMPLE:

The president of this company takes ultimate responsibility to ensure all management, safety and field personnel are adhering to the written requirements within this program. In the event compliance is not achieved the president will take immediate action to rectify this situation.

*Safety Personnel* - What will the safety personnel's responsibilities be in regards to this program.

EXAMPLE:

The safety personnel will be responsible for the training of all effected employees on site. Other responsibilities will include accident investigations, daily inspections for hazards, technical advisor to field management and reporting safety status weekly to the president.

*Field Managers* - What will the field managers responsibilities be in regards to this program.

EXAMPLE:

Field managers will be responsible for the daily inspections with the safety personnel, overall compliance with the written program, enforcement of program requirements and ensuring employees are working in a safe manner when exposed to any and all fall hazards. These managers will also be held responsible for weekly safety meetings which will be held with subcontractor and employee representatives.

*Construction Workforce* - What will be the workforces responsibilities in regards to this program.

EXAMPLE:

Construction workers are responsible to actively participate in all tool box talks, report

any fall hazards to management, work in a safe manner and adhere to the fall prevention and protection requirements of this program. These workers are also responsible for all specified daily inspections on all personal fall arrest equipment, before use.

#### **IV. ACCOUNTABILITY AND ENFORCEMENT**

***Accountability Measures*** - In this section explain what your companies approach will be to hold personnel accountable for complying with this program.

##### EXAMPLE

All field personnel will be held accountable for the enforcement and compliance with this program through annual and/or end of job reviews of the following criteria.

1. The overall job incident rate and the number of fall injuries as compared to company average.
2. Review of documented daily inspections, focusing on repeat discrepancies.
3. Review of accident investigations and corrective measures taken.

The review of these areas will be calculated into both prospected bonuses and annual performance raises.

***Enforcement Policy*** - In this section explain what the companies enforcement policy will be.

##### EXAMPLE:

This company's enforcement policy will be both positive and negative enforcement with the following guidelines.

1. First offense employee will be written up regarding the violation and records will be maintained on site.
2. Second offense the employee will be dismissed from the site for a period of three days without pay, additional documentation will be recorded.
3. Third offense within a six month period, employee will be terminated.
4. Any employee who works six months without violating this program will receive a \$200 bonus.

#### **V. HAZARD IDENTIFICATION AND ELIMINATION**

***Job Site Inspections*** - In this section outline what the minimum requirements will be for the purpose of job site inspections.

##### EXAMPLE:

All company job sites will be inspected at least once per day by both field managers and

the safety personnel. In this daily inspection these individuals will focus on the following hazards.

1. Any area or activity which exposes an employee to a fall hazard.
2. Falls hazards associated with the following areas;
  - a) Scaffolds
  - b) Ladders
  - c) Steel erection
  - d) Roofing
  - e) Floor holes
  - f) Open sided floors
  - g) Scissors lifts.
3. Records of the daily inspections will be maintained by the safety personnel.

***Analyzing the Work Area*** - In this section explain what methods will be used to analyze the work area for fall hazards.

EXAMPLE:

In analyzing the work area management and safety personnel will review work conditions for current and upcoming fall hazards. This will be accomplished with a review of the blueprints, current job status and assistance from field personnel. In analyzing the work area focus on those areas most likely to result in falls and the activities that workers will be doing.

***Pre-Planning for Fall Prevention*** - In this section explain how the company will pre-plan to prevent employees from being injured from falls.

EXAMPLE:

Our company will pre-plan for fall prevention by completing the following tasks/responsibilities.

1. Order and install stairways with the guardrails already attached.
2. Have the designer/architect specify proper anchor points for personal fall arrest systems.
3. All floor openings for ductwork, plumbing etc., will not be cut until the material is going through the floor, eliminating the need for covers.
4. All open sided floors will have guardrails attached before employees will be allowed to work on this level.
5. All scaffold systems, regardless of height, will have guardrails attached.



## **VI. FALL PREVENTION**

***Engineering Controls*** - In this section explain what engineering controls will be used to limit fall exposure to the employees.

### **EXAMPLE:**

Our company, during steel erection processes, will incorporate the following engineering controls.

1. A maximum amount of the structure will be assembled on the ground minimizing the fall exposures.
2. All horizontal members will have a horizontal lifeline attached on the ground allowing access to an anchor point for exposed iron workers.
3. In areas where lifelines or other conventional methods are infeasible, safety nets will be used.

***Alternate Work Methods*** - In this section explain what alternate work methods will be incorporated to minimize the fall exposures to effected employees.

### **EXAMPLE:**

The alternate work methods incorporated with this company will include the following.

1. All steel erection and concrete precast erection will be connected from articulating boom lifts by employees trained in this task and on the equipment.
2. Controlled access zones are not allowed for leading edge operations with our company. The alternate work method employed will include a horizontal life line behind the leading edge, designed for multiple employees, with retractable lanyards attached for the employees working on the leading edge. This method will provide an effective active fall protection system.

## **VII. CONVENTIONAL FALL PROTECTION**

***Guardrails*** - In this area explain the type of guardrails, and their requirements, which will be used to protect employees.

### **EXAMPLE:**

On all of our projects, only guardrails made from wood and wire rope will be acceptable. All guardrail systems will comply with the current OSHA standards. These guardrails will be placed in the following areas.

1. On all stair systems.
2. On all open sided floors.
3. Around all holes which are too large for hole covers.

4. On all elevator shaft openings.

**Safety Nets** - If you will be incorporating safety nets, in this section explain the minimum requirements for their use and installation.

EXAMPLE:

Safety nets will be used only during steel erection activities, when working over water and on unique projects when other conventional systems (Guardrails, hole covers) are not feasible. In the event safety nets are employed with the direction of safety personnel, the following guidelines will be followed.

1. All nets will be designed for personal fall and debris protection.
2. Nets will be installed, tested and inspected by a competent person.
3. Safety personnel will inspect nets daily.
4. All OSHA requirements will be strictly adhered to.

**Hole Covers** - In this section explain what the minimum requirements for hole covers will be for your company.

EXAMPLE:

With our company we will minimize the use of hole covers with engineering controls. In the event covers are required they will meet the following requirements.

1. For hole covers in areas of personnel traffic, and dimensions of less than 24 inches x 24 inches, all hole covers will have a 2 x 6 framework covered with 3/4 inch CDX plywood, secured with nails and have the word hole written on the cover.
2. For larger holes, the field engineer will specify steel plate which will cover all large holes, be secured and properly marked.

**Personal Fall Protection Systems** - In this section specifically identify what type of personal fall arrest systems will be allowed on the job.

EXAMPLE:

All employees on any of our projects that will be required to wear a personal fall arrest system will follow these guidelines.

1. Only a full body harness is allowed for fall arrest.
2. Only shock absorbing lanyards or retractable lanyards are acceptable.
3. All lanyards will have locking snaphooks.
4. All personal fall arrest systems will be inspected before each use by the employee.

## VIII. SPECIALIZED FALL PROTECTION

***Controlled Access Zones*** - In this section explain if and where controlled access zones will be allowed.

### EXAMPLE:

Controlled access zones will not be allowed on any of our projects; or controlled access zones will only be allowed for the use of overhand brick laying operations and the following guidelines will be followed.

1. During these operations a safety monitor will be established at the lower levels.
2. Only brick layers will be allowed inside this zone.
3. The controlled access zone will be cleared with the site safety professional before being established.

***Warning Line System*** - In this section explain if warning lines are allowed, and if not what methods will be employed to protect roofing contractors.

### EXAMPLE:

Warning line systems will not be allowed during the roofing operations. In these activities only the following will be acceptable during these operations.

1. An acceptable guardrail system will be placed around the entire roof.
2. Safety nets will be installed around the entire roof.
3. Personal fall arrest systems may be used with the guidance of the safety professional.

***Safety Monitoring System*** - In this section explain in what situations, and special circumstances, the safety monitoring system will be allowed.

### EXAMPLE:

Safety monitors will only be allowed as a lower monitor for brick layers who have successfully established a controlled access zone with the permission of the safety coordinator. In these situations, the safety monitor will meet the following guidelines.

1. Have no other duties other than acting as a safety monitor, no exceptions.
2. Will wear a red vest to identify them as a safety monitor.
3. Will remain in place as long as a controlled access zone is in place.

***Fall Protection Plans*** - In this section explain if these plans will be allowed and under what conditions.

EXAMPLE:

Under no circumstances will fall protection plans be allowed on any of our projects because these plans allow the excessive fall exposure to effected employees.

**IX. APPLICATION OF FALL PROTECTION SYSTEMS**

*Conventional/Specialized Systems* - In this section explain for each of the conventional and specialized systems being allowed for use specifically where they will be implemented.

EXAMPLE:

Guardrail systems will be applied to all of the following areas.

1. Permanent and temporary stairs
2. Around large holes
3. During roofing operations

(follow this procedure for the remaining conventional and specialized systems in use)

**X. INSPECTION, STORAGE AND MAINTENANCE OF FALL PROTECTION SYSTEMS**

*Conventional and Specialized Systems* - In this section explain what your companies policies will be regarding the inspection of the systems in use.

EXAMPLE:

Guardrail systems on all of our projects will be inspected under the following guidelines.

1. Daily, a visual inspection will be completed by the safety coordinator and project manager.
2. Weekly, a complete structural inspection will be completed by a competent person.

(Follow this procedure for all systems in use. All personal fall arrest systems should be inspected in accordance with the manufacturers directions.)

**XI. TRAINING**

*Competent Person Trainer Requirements/Responsibilities* - In this section explain what this persons responsibilities will be.

EXAMPLE:

The competent person trainer on all of our projects will be adequately trained in the fall protection systems in use and will be responsible for training all field employees during the new employee orientation. In the event a new system is employed, additional training on this system will commence immediately to all effected employees.

***Documentation Requirements*** - In this section explain the minimum documentation requirements for the field training of employees.

EXAMPLE:

All employees trained in fall protection will be documented in the following manner.

1. The date of the training
2. The employees printed name and signature
3. The printed name and signature of the trainer
4. The specific subjects covered in the training session

***Employee Selection*** - In this section explain what methods will be employed to select employees who will be allowed to work in fall hazard areas.

EXAMPLE:

All employees allowed to work with fall exposures, and trained to protect themselves, will meet the following criteria.

1. No employees with disorientation difficulties will be allowed to work at heights.
2. Employees with medical evidence of epileptic backgrounds will not be allowed to work at heights.
3. Employees who have difficulty understanding how to adequately protect themselves will not be allowed to work at heights.

## **XII. RESCUE PROCEDURES**

***Rescue Methods/Options of Fallen Personnel*** - In this section explain what methods will be used to rescue fallen personnel.

EXAMPLE:

All employees/individuals will be rescued by on site trained personnel trained in rescue procedures with the use of scissor/boom lifts, ladders and man baskets. Rescue personnel will decide which method is most effective in this situation.

***Communication Issues*** - In this section explain what the communication procedures will be in the event of a fall.

**EXAMPLE:**

In the event of a fall the following people will be notified as soon as possible.

1. Trained rescue personnel
2. Fire department or emergency medical services
3. Project manager/safety coordinator
4. Victims family

***Communication Issues*** - In this section explain what procedures will be followed regarding communication issues.

**EXAMPLE:**

The company has decided that at the beginning of each project the safety coordinator will discuss possible rescue operations with local emergency services and follow their specific recommendations. These recommendations will be in writing and filed as an amendment to this safety program.

### **XIII. ACCIDENT/INCIDENT INVESTIGATION**

***Conducting the Investigation*** - In this section explain who is responsible to complete the investigation.

**EXAMPLE:**

All accident investigations will be completed by the site safety coordinator.

***Documentation*** - In this section explain the minimum requirements regarding documentation for an accident.

**EXAMPLE:**

The safety coordinator will complete and file the following documentation.

1. Interviews with co-workers and witnesses
2. OSHA first report of injury
3. Insurance accident investigation forms
4. Company accident investigation forms

***Interviews*** - In this section outline the interview procedure, and who will be interviewed.

EXAMPLE:

The safety coordinator accompanied by the project manager and victims foreman will interview the following personnel for evidence only, do not look for fault.

1. Victims friends
2. Co-workers
3. Witnesses
4. Foreman

***Reporting Requirements*** - In this section explain what the reporting will be for the safety coordinator.

EXAMPLE:

The safety coordinator will report this accident to the following departments.

1. Company insurance representative
2. Corporate home office
3. Corporate attorney

#### **XIV. PROGRAM EVALUATION**

***Evaluation of the Program*** - In this entire chapter the company needs to identify those methods that will be employed to constantly evaluate and improve their fall prevention/protection performance.

EXAMPLE:

Our company will constantly strive to improve the performance of our fall prevention/protection to the benefit of our employees. Our goal is to improve performance by 10% each year. The criteria used to evaluate this performance will be the following.

1. Accident/incident reports
2. Medical reports
3. Incident rates
4. Management Employee Compliance
5. Industry Comparison

# Program/Plan Evaluation

**Key issues to be discussed within this section include:**

1. Accident/Incident reporting.
2. Medical reports.
3. Incident rates.
4. Management/Employee compliance.
5. Industry comparison.
6. Conclusion.

## Program/Plan Evaluation

The evaluation and continual modification of a company's program or plan is an essential part of providing a safe work environment free of falls. In evaluating the program a number of areas may be addressed. The following are by no means a comprehensive list of areas that a company has to look at in their evaluation process. This list and accompanying explanations will assist contractors in some of the processes involved in the evaluation of the programs overall effectiveness.

## Accident/Incident Reports

Accident and incident reports, as well as near miss reports, are a very good source of material which may identify problem areas within the fall protection program. A review of these reports may indicate some of the following concerns.

1. A high incidence of specific type of fall injuries. For example, you may have a large percentage of falls from scaffolding.
2. These reports may indicate that a number of fall related injuries were from employees who had the same supervisor, project manager or safety coordinator.
3. These reports may indicate that a majority of the fall accidents were happening early Monday morning.
4. These reports may indicate that the accidents were happening during a specific job process. For example, most injuries happened during the installation of HVAC ductwork.



5. They may indicate that a specific trade is experiencing a high rate of fall injuries.

## **Medical Reports**

The medical reports that a contractor receives from the attending physician are another valuable information source. These reports should also be evaluated in regards to the written program. Some of the information that could be gathered from these reports include:

1. The types of injuries that the contractor is experiencing from falls. For example, you may have a high rate of broken legs which are effecting the company's workers' compensation rating.
2. There may be evidence of possible inebriation reported by the physician, in which case the contractor needs to immediately address the situation.
3. There may be reports from the physician which indicate that employees should not have been allowed to work at heights. For example, allowing employees with a history of seizures to work at heights.
4. These medical reports may also indicate other trends related to the physical ability of injured employees to work in the conditions present when the injury happened.

## **Incident Rates**

Incident rates, for injuries and lost time accidents, can be calculated to give management an idea of the overall performance of the company's safety program. This information can be further broken down as an annual tracking tool which will demonstrate in a graph form if the modifications to the program are effective. By doing this the safety personnel will have a visual tool to present to management. Some of the types of information which can be displayed from this information include:

1. The incident rates for any of the following areas:
  - a) Specific project
  - b) A specific trade
  - c) A specific subcontractor
  - d) A specific supervisor, safety coordinator or project manager
  - e) Incident rates for days of the week
  - f) Incident rates for months of the year
  - g) Incident rates for types of injuries

By calculating and reviewing this information the safety director will be able to identify if there are any areas of concern relating to hazards on their projects. This will also assist, when completed annually, in tracking the improvement of any changes made within the company's approach, enforcement or overall approach in providing a safe work environment.

## **Management/Employee Compliance**

Regardless of the detail or good intentions of any safety program, if management and the employees do not follow this program there will inevitably be accidents. The safety director needs to address this issue to avoid the possibility that the safety programs will become a "Paper Tiger."

The following are some methods that the safety director may use to identify if compliance has become an issue.

1. Review disciplinary reports for evidence that a specific individual, management team or subcontractor is allowed to continue to operate without any concern for the programs requirements.
2. Identify any individuals who consistently have very high accident rates and are allowed to continue with the same work practices by management.
3. Identify if the company's disciplinary/enforcement policy is being adhered to. If there is no evidence that this aspect has been followed, this may be evidence that management is unwilling to enforce this policy.
4. Identify individuals who consistently have very low injury rates, and investigate why these personnel have done so well.
5. There may be other underlying factors which effect other personnel. One possible explanation would be a drastic difference in the hazards present at different job sites.

This evaluation alone will not explain why some areas are performing better than others. It is merely one set of data involved in the overall evaluation process. Safety personnel should be cautioned not to explain away non-compliance based on this issue alone. Some factors which may be contributing to this problem could be:

1. There is inadequate training of all field personnel.
2. There are inadequate inspections by competent personnel to identify job hazards.
3. There is little or no pre-planning in regard to safety resulting in extensive hazards.

4. There is inadequate safety equipment available for site personnel.
5. Safety equipment or systems are being used incorrectly.
6. The written program may not be clear or even address these issues.
7. There may be a credibility problem between labor and management. In other words, labor may believe that management doesn't care about their safety, resulting in a confrontational dialogue between the two factions.

## **Industry Comparison**

Another evaluation tool which identifies or tracks the company's standing in industry is the comparison against other contractors within the same industry specialty. By doing this the contractor will be able, at a minimum, to identify if they are above or below the average. Some of the areas a contractor may wish to look at include:

1. Incident rates
2. Lost time rates
3. Experience Modification Rating, EMR (related to workers compensation)

## **Conclusion**

The goal of the safety director is to evaluate the company and programs in as much detail as possible. Once this evaluation process is complete, they will have enough data available to begin to identify which areas need to be addressed in order to lower accidents. Once these areas have been addressed the process of developing alternatives begins.

When the changes have been made, communicated and followed up upon the safety director will complete the evaluation process again. If followed on an annual basis the director will be able to track the company's progress toward continual improvement in providing a safe work environment.