An Introduction to Practical Fall Protection for Pest Control

Bird control work, to address this problem of birds on the edge of this five-foot-wide parapet some ten stories in the air, is one of many examples of where our industry needs detailed fall protection programs and well-trained and equipped employees.

GEOtech Supply Co. L.L.C.
www.geotechsupply.com

An Introduction Practical Fall Protection for Pest Control v1.6
December 2011

Disclaimer:

This document provides general information about safety and fall protection procedures and processes in California. This document does not replace or substitute for your responsibility to read and understand all of the applicable laws, regulations and standards, as well as your responsibility to establish your own in-house standards, procedures and training programs to ensure you work safely and legally.

This document was published by Geotech Supply Inc., for the PCOC Fall Protection Committee. This document was created by a cooperative project between GeoTech Supply and the PCOC Insurance Program, with input from Clark Pest Control.

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For more information and resources:

GeoTech Supply – www.geotechsupply.com

Safety supplies, fall protection supplies, innovative fly lights and other pest management supplies, construction supplies and other resources for the pest management and construction trades. See the back cover for more details about the products and services supplied by Geotech Supply.

PCOC Insurance – www.pcocinsurance.com

Safety training and resources to help you and your employees address fall protection and other hazards in the workplace. At the PCOC Insurance website you can find email and phone contact information where you can ask specific questions and request assistance in developing your own in-house safety programs.

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Fall Protection Rules Generally:

OSHA vs Cal-OSHA Issues:

Cal-OSHA (California Department of Industrial Relations) is a program authorized under the auspices of the federal OSHA program, and subject to their rules.

> *States administering their own occupational safety and health program through plans approved under section 18(b) of the Act must adopt standards and enforce requirements which are at least as effective as federal requirements. Plan states must adopt standards comparable to the federal standards within 6 months of a federal standard's issue.*
> http://www.osha.gov/Publications/osha2098.pdf

OSHA® **VS** STATE OF CALIFORNIA CAL OSHA

Where this is currently an issue is that perhaps the only exception to the above rule is within the construction safety standard addressing fall protection. The Federal OSHA Standard (1926.501(b)(2)(i)) requires fall protection when working above 6 feet. The California code (8 CCR 1670(a)) says 7.5 feet. California OSHA successfully argued that their rule of 7.5 feet was "just as effective" as the Federal 6 foot rule since a fall from 7.5 feet was just as fatal as a fall from 6 feet. There are a number of challenges for employers due to this conflict, one being of the issue of jurisdiction;

> *The California State Plan applies to all public and private sector places of employment in the state, with the **exception** of Federal employees, the United States Postal Service (USPS), **private sector employers** on Native American lands, maritime activities on the navigable waterways of the United States, private contractors working on land designated as exclusive Federal jurisdiction, and **employers** that require Federal security clearances. See 29 CFR 1952.172.*
> http://www.osha.gov/dcsp/osp/stateprogs/california.html

If you are working on a Federal Facility or on Native American lands, or a number of other circumstances, OSHA rules and OSHA enforcement comes into play, rather than Cal-OSHA rules.

General Fall Protection Height Triggers:

30 inches	Unenclosed elevated work locations <u>inside</u> buildings - 8 CCR 3210(a)
4 feet	Unenclosed elevated work locations <u>outside</u> buildings - 8 CCR 3210(b)
7-1/2 feet	Perimeters/edges/sides/slopes/etc. of structures – 8 CCR 1670(a)
	The trigger is 6 feet under Federal law: 1926.501(b)(2)(i)

Hierarchy of Controls

A standard safety practice for managing the control of occupational hazards is to use the hierarchy of controls to aid in the decision making to implement “feasible and effective” controls. The classic order of the hierarchy of controls in workplace decision-making is as follows:

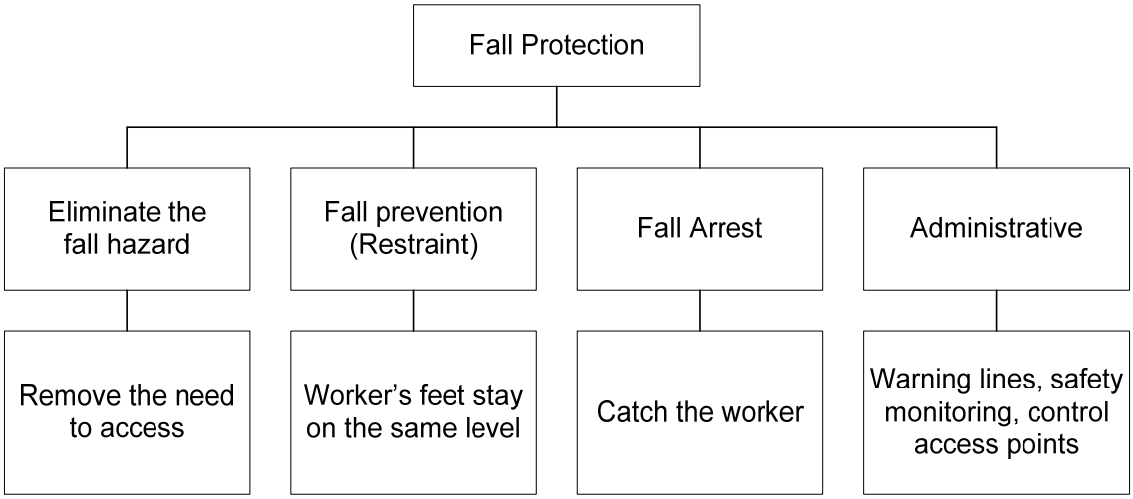
1. Elimination
2. Substitution
3. Engineering controls
4. Administrative controls
5. Personal protective equipment

Historically, when implementing the hierarchy of controls for fall protection, industry has altered and clarified the list of controls to better address fall hazards. The American National Standards Institute (ANSI) and the American Society of Safety Engineers developed ANSI Standard Z359 to address Fall Protection Standards. Those standards include the Fall Protection Hierarchy of Controls. When making decisions about implementing fall protection, we should follow the ANSI standard.

Fall Protection Hierarchy of Controls *(ANSI Z359.2 Section 5.1)*

The following hierarchy or preferred order of control, shall be used to choose methods to eliminate or control fall hazards. The fall protection hierarchy shall be considered when designing fall protection solutions for both existing and new facilities. The methods listed below are in decreasing order of preference.

1. Elimination or Substitution. Removing the hazard or hazardous work practices. How can we engineer the work so that the employee does not have to work at height?
2. Passive Fall Protection. Isolating or separating the hazard or hazardous work practice from employees or others. Example: guardrails
3. Fall Restraint. Securing the authorized person to an anchorage, using a lanyard short enough to prevent the person’s center of gravity from reaching the fall hazard.
4. Fall Arrest. A system designed to stop an authorized person after a fall has begun.
5. Administrative Controls. Work practices or procedures that signal or warn an authorized person to avoid approaching a fall hazard.



Training:

Pest control companies should have a number of training and standard programs in place. Depending on the type of work you are doing and the equipment you are using, the training can vary. Below are five training programs (and a couple of sub-set training programs) that will be applicable to many pest companies that do bird control or other vertebrate work, as well as wood destroying pests and organisms companies that do extensive repairs.

Companies that do not have employees working at height, or using specialty equipment probably will only need the first two areas of training.

1. **Ladder Safety**
2. **Basic or Introduction to Fall Protection**
3. **Aerial Lift Certification**
4. **Scaffold Erector/Dismantler Competent Person**
    - **Scaffold Worker Training**
5. **Fall Protection Competent Person**
    - **Fall Protection User**
    - **Suspension Trauma Training**
    - **Rescue Training**

These training programs should have both classroom and hands-on training, with both qualitative and quantitative evaluations of performance to ensure employees have a firm, working grasp of the content of these programs.

1) Portable Ladders

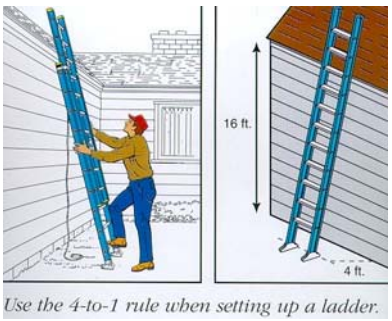
Every year, approximately 150,000 people end up in emergency rooms due to falls from ladders. In the construction industry, 17% of disabling work injuries, and 30% of accidental deaths, are as a result of falls from ladders.

Because of this, employers must train all employees who use portable (or fixed) ladders (3203, 1509, and 1510 CCR). The training should start with very basic issues, such as what the different types of ladders are, and what the various parts of the ladder are. Continuing training needs to include how to safely use a ladder, which begins with inspecting ladders for safety, the requirement for legible safety stickers that cover duty ratings and safe use of ladders.

Parts of a Self-Supporting Ladder

1. Side Rail
2. Top Rest
3. Spreader or Locking Device
4. Rungs, Cleats, or Steps
5. Cross Brace
6. Knee Brace
7. Safety Feet

Training needs to address important issues, such as how to set up both self-supporting and straight ladders, the importance and requirements to secure straight ladders so they do not slip out while working on them, and the dangers of electricity (issues such as use of ladders near electrical lines, and the mandate of not using aluminum ladders to do any electrical work).



Use the 4-to-1 rule when setting up a ladder.

Sample Ladder Duty Rating Labels

- Duty rating labels provided for each ladder on the rail
- Typically color-coded by Type / Duty Rating

Step Ladder Label Extension Ladder Label

2: Basic or Introduction to Fall Protection:

Virtually all field employees should be given formal fall protection training (typically 1-2 hours). This is a general course, which explains the hazards of heights and the things we can do to address hazards, such as guardrail standards.

This class is very important for all field employees, to give them an awareness of what they should and should not do, and to keep them from putting themselves in danger.

There is an OSHA/CDC Fatality Assessment and Control Evaluation (FACE) report (available on the PCOC Insurance website) that details the fall death of a general pest technician, and give specific recommendations to our industry as to what pest control firms should be doing to prevent this type of incident that happens to others in our industry. Below is a short excerpt from the OSHA/CDC FACE Report (Report #97-MA-038-01)

> *On August 13, 1997, a 25 year old male pest control technician died when he fell from the roof of an apartment building. The technician was spraying for spiders in the vents and other parts of the roof when the incident occurred. While spraying along a gutter of a roof-top penthouse, the technician walked off the edge of the roof and fell nine stories to the parking lot below. Emergency medical services were called immediately, the victim given CPR and transported to a local hospital emergency room where he died.*
>
> *The victim was a 25 year old male pest control technician. He was employed by the company for approximately seven months and was at the jobsite for less than an hour at the time of the incident. He had formal training in college in integrated pest management prior to joining the company.*

3) Aerial Lift Certification:

Anyone using an aerial lift must successfully complete a one-day aerial lift class, which includes classroom and hands-on elements using both scissors and boom lifts. Your policy should also require that your aerial lift-certified employees then complete a pre-job safety meeting prior to using any lift, wherein they review our policies, review the manual for the specific lift they have rented, and perform a formal safety check of the lift.

In this photo, a pest technician performs a documented pre-use inspection of his lift. The first thing this technician did, after doing a quick walk around the lift, was to pull out the manual for this lift, read it, and then conduct a documented tailgate meeting with his fellow employees working at the jobsite. It is important that all employees on the jobsite are familiar with the particular operations of the specific lift they are using, are aware of the unique hazards of the particular jobsite, and review the responsibilities and duties of all parties at the jobsite. Using an inspection form and the user manual, the employees perform an inspection of the lift, which includes testing all of the operations, including an emergency lowering of the lift from the ground.

4) Scaffold Erector/Dismantler Competent Person:

Anyone erecting or dismantling scaffolds, or supervising employees on a scaffold must successfully complete a scaffold Erector-Dismantler Competent Person training. Depending on the types of scaffolds to be used, this training may be one or several days.

Typically, companies in the pest control and light construction industries limit their use of scaffolds to frame or fabricated scaffolds, which typically have a one-day Competent Person training program. A typical one-day class includes classroom and hands-on elements where the student builds and dismantles a multiple-level scaffold. Only these individuals designated as Scaffold Erector-Dismantler Competent person may assemble/erect a scaffold, or disassemble/break down a scaffold. A Scaffold Erector-Dismantler Competent Person must inspect the scaffold before any employees get onto a scaffold (this assumes the scaffold was left on a jobsite overnight) and a Scaffold Erector-Dismantler Competent Person must be on-site anytime anyone is on a scaffold. Scaffold users go through a shorter training program and can only work under the direct and personal (on-site) supervision of a Scaffold Erector-Dismantler Competent person.

> **Scaffold Worker Training:** This is a somewhat less-rigorous training regimen covering the areas a worker needs to know and understand to work on scaffolds safely under the direct and personal (on-site) supervision of a Scaffold Erector/Dismantler Competent Person.

5) Fall Protection Competent Person

Anyone actually working at height should successfully complete either a Fall Protection Competent Person training or Fall Protection User training. This is above and beyond your basic or introductory Fall Protection training. The Fall Protection Competent Person training should be at least an all-day course including classroom and hands-on sessions.

The topics to be covered are broad, giving the necessary background and then more detail training on how to implement a fall protection plan in the field. This training includes how to figure fall distances and do the math to implement fall arrest programs, what decisions Fall Protection Competent Persons may and may not make, how to choose anchors and under what circumstances they may do so, and how anchors may be installed and many other subjects.

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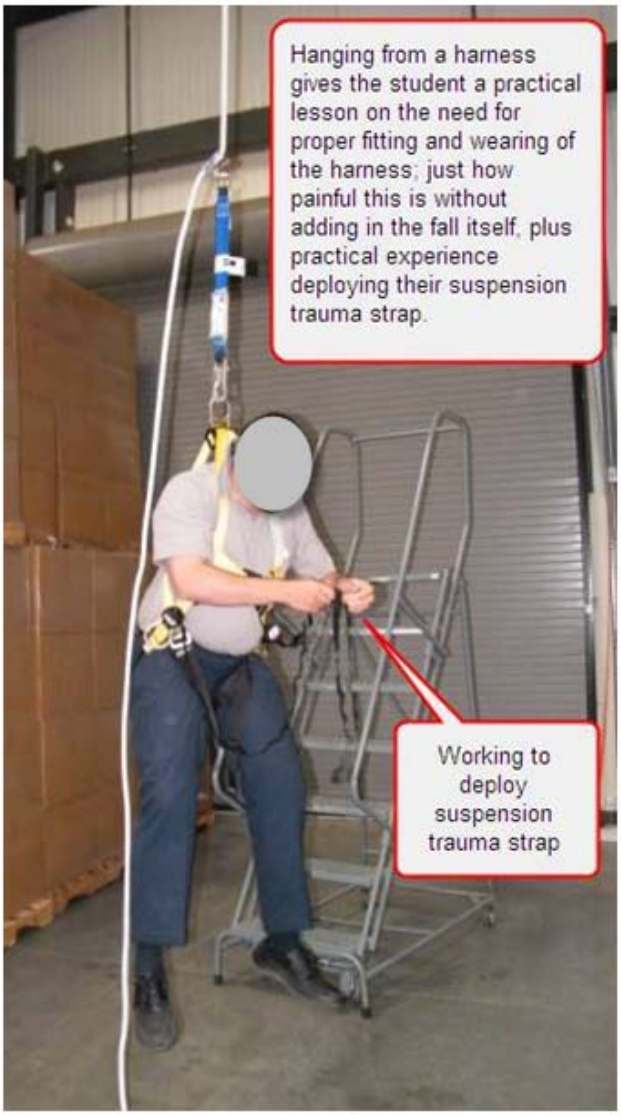
- **Fall Protection User Training**

This is a somewhat less-rigorous training regimen than the Fall Protection Competent Person Training, covering the areas a worker needs to know and understand to work on scaffolds safely, under the direct and personal (on-site) supervision of a Fall Protection Competent Person.

- **Suspension Trauma Training**

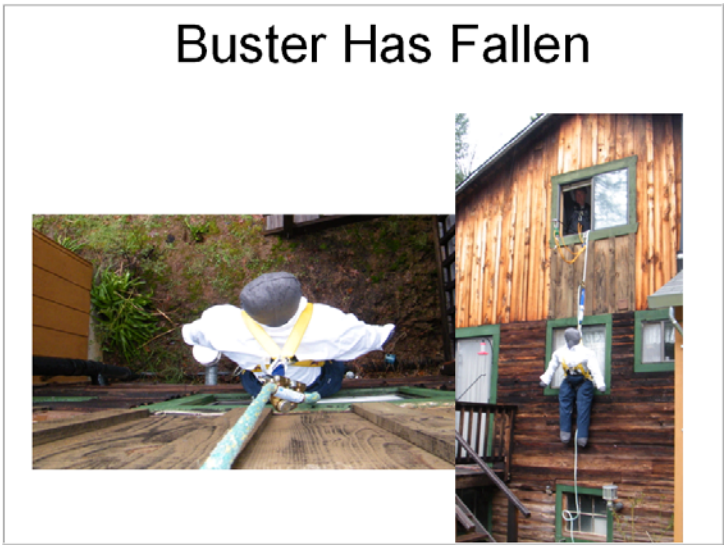
Suspension trauma training is included in both Fall Protection Competent Person and Fall Protection User training.

Hanging in a harness can be fatal due to orthostatic intolerance. Employees need to understand just how uncomfortable and dangerous it is to hang in a harness, and what they can do to minimize the harm. Harnesses should be equipped with after-market suspension trauma straps, which will extend the amount of time a person can hang in a harness without fatal results, as well as reduce the pain and discomfort of hanging in the harness.



- **Rescue Training**: One of the most important aspects of any Fall Protection training, and site plans for fall protection work, is having a plan, tools and training on how to implement a rescue. While the crew will always call 911 to have medical attention standing by once the victim is lowered to the ground, it is the responsibility of the company putting their employees at risk to have a formal Fall Rescue plan, and the tools to impellent it at every jobsite.

Having the correct equipment, and knowing how to use it and how it will be potentially implemented at each jobsite, is a crucial aspect of Fall Protection Training, and part of the preparation of each jobsite.



Choosing the right equipment is crucial. Many fall rescue kits require the end user to purchase additional tools and products to make the core rescue kit work. GeoTech looked at many different products, and came to the conclusion that the Gotcha Rescue Kits were the best kit available in the market.

Gotcha™ RESCUE RANGE

USGOTCHA : Gotcha Rescue Kit

The original kit in the range, designed for tradesmen who work at height.

The Gotcha rescue kit is a unique solution to a problem faced by all workers at height who use PPE for protection against falls. Most rescue provision has focused on the more extreme activities carried out at height, the Gotcha kit is designed for tradesmen who use common items of fall protection. In the event of a fall their situation if suspended in a harness is just as serious as any other worker and a swift recovery is essential.

No knives are required when using this kit!

Key Features :

- Suitable for Rescue from - Fall Arrest Lanyards and Fall Arrest Blocks
- This is a no-cut kit - The casualty is raised to release their original attachment
- Rescue direction - You can raise or lower the casualty with this kit
- Pre-assembled - No assembly is required by the user
- Remote attachment - The casualty can be attached from a point of safety
- Single person use - The Gotcha is for raising or lowering a single person
- Maximum Working Length - The Gotcha kit is available in four lengths.
- Color coding - The kit is color coded for simplicity

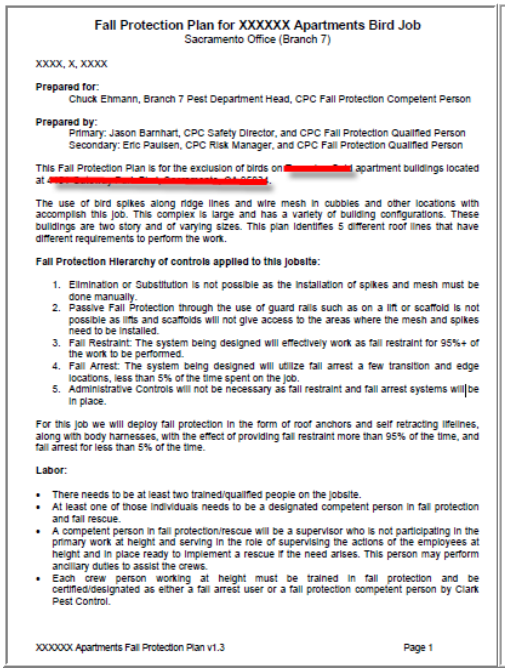
Site Fall Protection Plans

Site Fall Protection Plans are developed and written up by a Competent Person for each jobsite. (*In some situations depending on the nature of the plan and situation, a Qualified Person rather than a Competent Person may be required to design and implement certain items, such as horizontal lines.*)

Site Plan Components:

- Who prepared it and their qualifications
- Date Prepared
- Location of jobsite
- Who approved it and their qualifications
- Who will supervise the jobsite, and their qualifications
- Fall protection hierarchy of controls applied to the jobsite.
- Labor: what is needed, their roles, training and qualifications.
- Equipment needed
- Anchors to be used and details as to their placement.
- Fall Rescue Plan
- Coordinating with Safety Director and other parties.

Depending on the nature and specifics of the job and the type of work being performed the plan would address those hazards, solutions, technologies and plans as is appropriate to have a useful plan in place and implemented for the particular job in question.



Fall Protection Plan for XXXXXX Apartments Bird Job
Sacramento Office (Branch 7)

XXXX, X, XXXX

Prepared for:
Chuck Ehmann, Branch 7 Pest Department Head, CPC Fall Protection Competent Person

Prepared by:
Primary: Jason Barnhart, CPC Safety Director, and CPC Fall Protection Qualified Person
Secondary: Eric Paulsen, CPC Risk Manager, and CPC Fall Protection Qualified Person

This Fall Protection Plan is for the exclusion of birds on [redacted] apartment buildings located at [redacted].

The use of bird spikes along ridge lines and wire mesh in cubbies and other locations with accomplish this job. This complex is large and has a variety of building configurations. These buildings are two story and of varying sizes. This plan identifies 5 different roof lines that have different requirements to perform the work.

Fall Protection Hierarchy of controls applied to this jobsite:

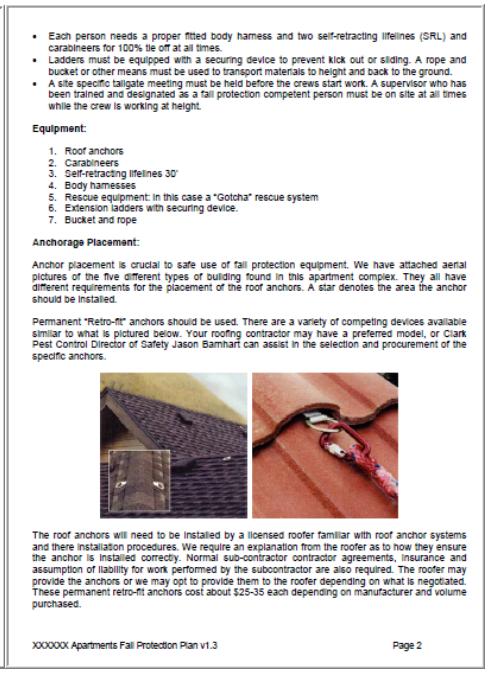
1. Elimination or Substitution is not possible as the installation of spikes and mesh must be done manually.
2. Passive Fall Protection through the use of guard rails such as on a lift or scaffold is not possible as lifts and scaffolds will not give access to the areas where the mesh and spikes need to be installed.
3. Fall Restraint: The system being designed will effectively work as fall restraint for 95%+ of the work to be performed.
4. Fall Arrest: The system being designed will utilize fall arrest a few transition and edge locations, less than 5% of the time spent on the job.
5. Administrative Controls will not be necessary as fall restraint and fall arrest systems will be in place.

For this job we will deploy fall protection in the form of roof anchors and self retracting lifelines, along with body harnesses, with the effect of providing fall restraint more than 95% of the time, and fall arrest for less than 5% of the time.

Labor:

- There needs to be at least two trained/qualified people on the jobsite.
- At least one of those individuals needs to be a designated competent person in fall protection and fall rescue.
- A competent person in fall protection/rescue will be a supervisor who is not participating in the primary work at height and serving in the role of supervising the actions of the employees at height and in place ready to implement a rescue if the need arises. This person may perform ancillary duties to assist the crews.
- Each crew person working at height must be trained in fall protection and be certified/designated as either a fall arrest user or a fall protection competent person by Clark Pest Control.

XXXXXX Apartments Fall Protection Plan v1.3 Page 1



- Each person needs a proper fitted body harness and two self-retracting lifelines (SRL) and carabineers for 100% tie off at all times.
- Ladders must be equipped with a securing device to prevent kick out or sliding. A rope and bucket or other means must be used to transport materials to height and back to the ground.
- A site specific tailgate meeting must be held before the crews start work. A supervisor who has been trained and designated as a fall protection competent person must be on site at all times while the crew is working at height.

Equipment:

1. Roof anchors
2. Carabineers
3. Self-retracting lifelines 30'
4. Body harnesses
5. Rescue equipment: In this case a "Gotcha" rescue system
6. Extension ladders with securing device.
7. Bucket and rope

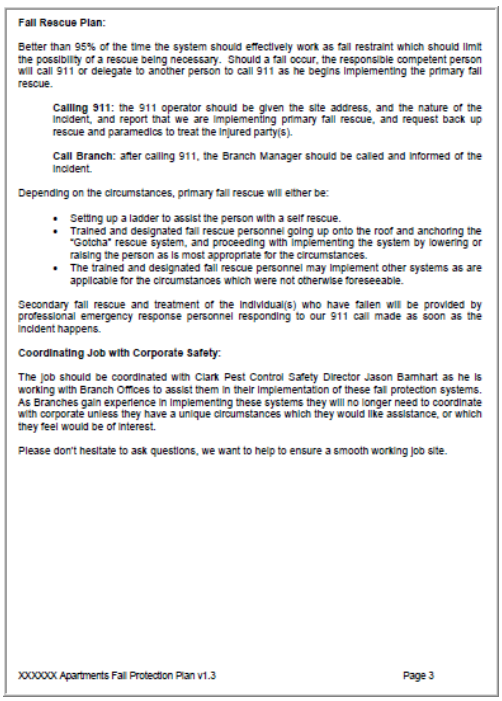
Anchorage Placement:

Anchor placement is crucial to safe use of fall protection equipment. We have attached aerial pictures of the five different types of building found in this apartment complex. They all have different requirements for the placement of the roof anchors. A star denotes the area the anchor should be installed.

Permanent "Retro-fit" anchors should be used. There are a variety of competing devices available similar to what is pictured below. Your roofing contractor may have a preferred model, or Clark Pest Control Director of Safety Jason Barnhart can assist in the selection and procurement of the specific anchors.

The roof anchors will need to be installed by a licensed roofer familiar with roof anchor systems and there installation procedures. We require an explanation from the roofer as to how they ensure the anchor is installed correctly. Normal sub-contractor contractor agreements, insurance and assumption of liability for work performed by the subcontractor are also required. The roofer may provide the anchors or we may opt to provide them to the roofer depending on what is negotiated. These permanent retro-fit anchors cost about $25-35 each depending on manufacturer and volume purchased.

XXXXXX Apartments Fall Protection Plan v1.3 Page 2



Fall Rescue Plan:

Better than 95% of the time the system should effectively work as fall restraint which should limit the possibility of a rescue being necessary. Should a fall occur, the responsible competent person will call 911 or delegate to another person to call 911 as he begins implementing the primary fall rescue.

Calling 911: the 911 operator should be given the site address, and the nature of the incident, and report that we are implementing primary fall rescue, and request back up rescue and paramedics to treat the injured party(s).

Call Branch: after calling 911, the Branch Manager should be called and informed of the incident.

Depending on the circumstances, primary fall rescue will either be:

- Setting up a ladder to assist the person with a self rescue.
- Trained and designated fall rescue personnel going up onto the roof and anchoring the "Gotcha" rescue system, and proceeding with implementing the system by lowering or raising the person as is most appropriate for the circumstances.
- The trained and designated fall rescue personnel may implement other systems as are applicable for the circumstances which were not otherwise foreseeable.

Secondary fall rescue and treatment of the individual(s) who have fallen will be provided by professional emergency response personnel responding to our 911 call made as soon as the incident happens.

Coordinating Job with Corporate Safety:

The job should be coordinated with Clark Pest Control Safety Director Jason Barnhart as he is working with Branch Offices to assist them in their implementation of these fall protection systems. As Branches gain experience in implementing these systems they will no longer need to coordinate with corporate unless they have a unique circumstances which they would like assistance, or which they feel would be of interest.

Please don't hesitate to ask questions, we want to help to ensure a smooth working job site.

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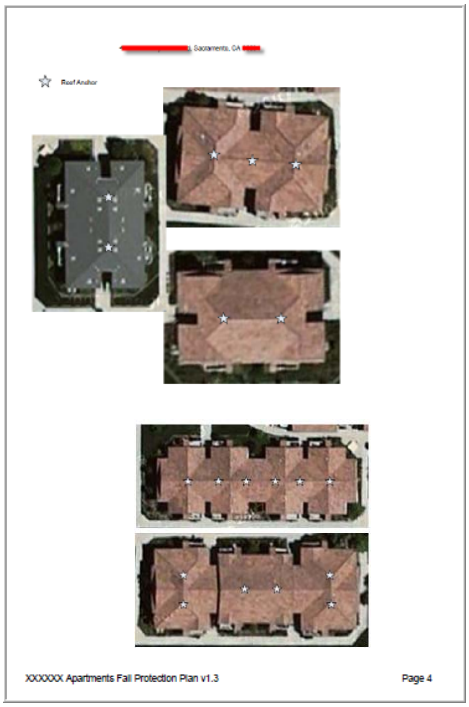


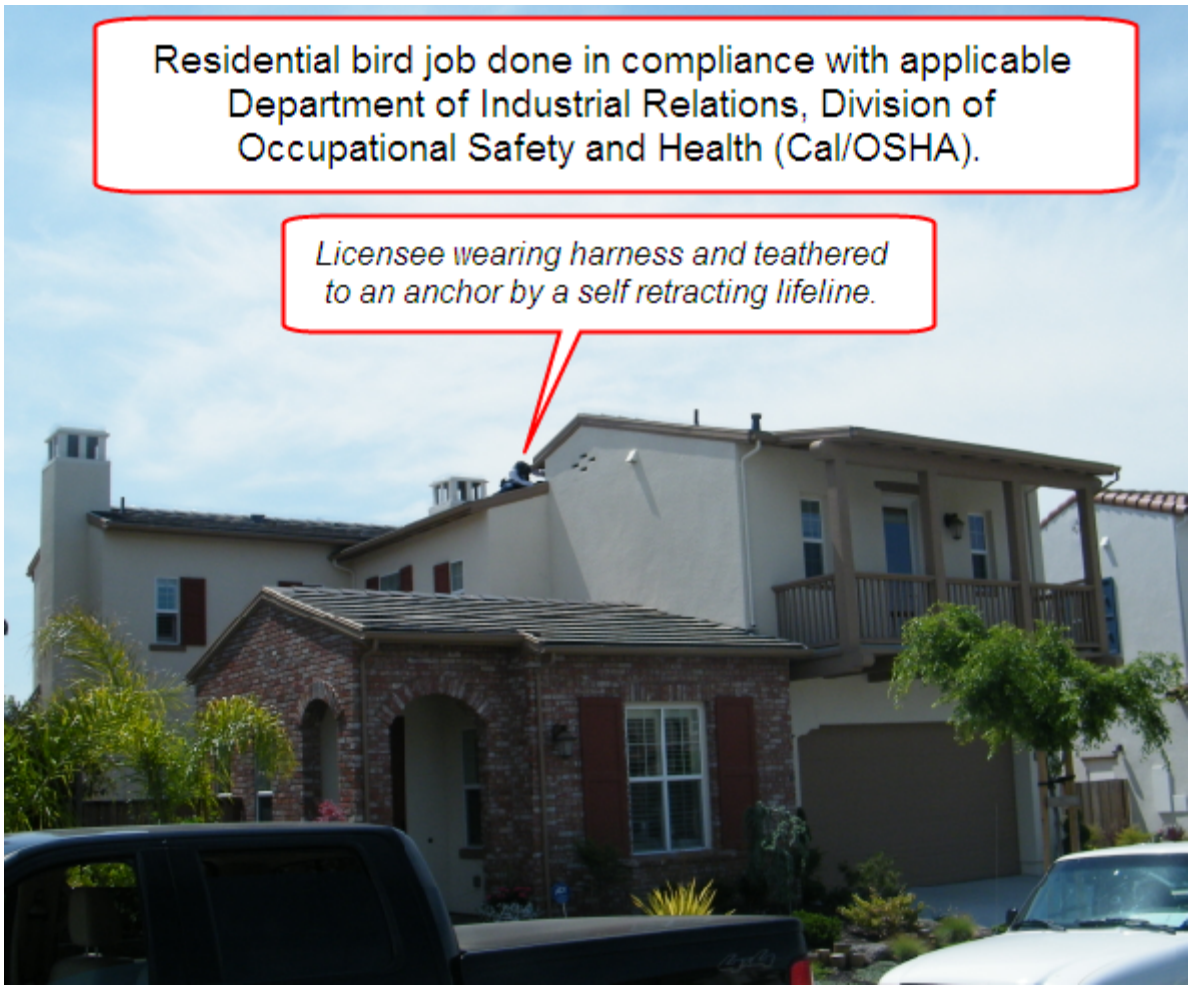
[redacted], Sacramento, CA [redacted]

☆ Roof Anchor

XXXXXX Apartments Fall Protection Plan v1.3 Page 4

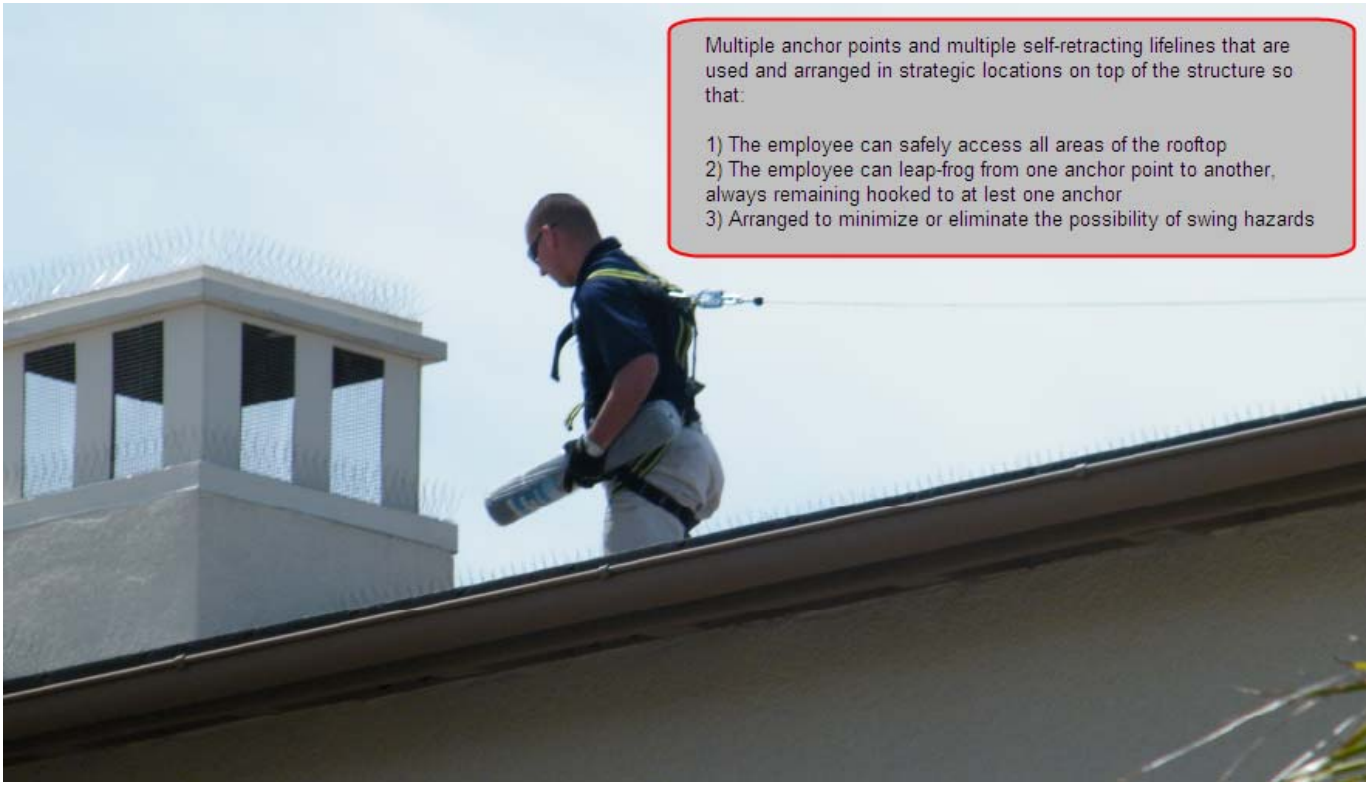
Practical Application of Fall Protection at a Jobsite:

- Site fall protection safety plan created by a Competent Person
- Anchor points determined by a Competent Person
- Anchor points installed by a Competent Person
- All personnel on-site trained and jobsite supervised by a Competent Person
- Cal/OSHA and ANSI standards and procedures followed

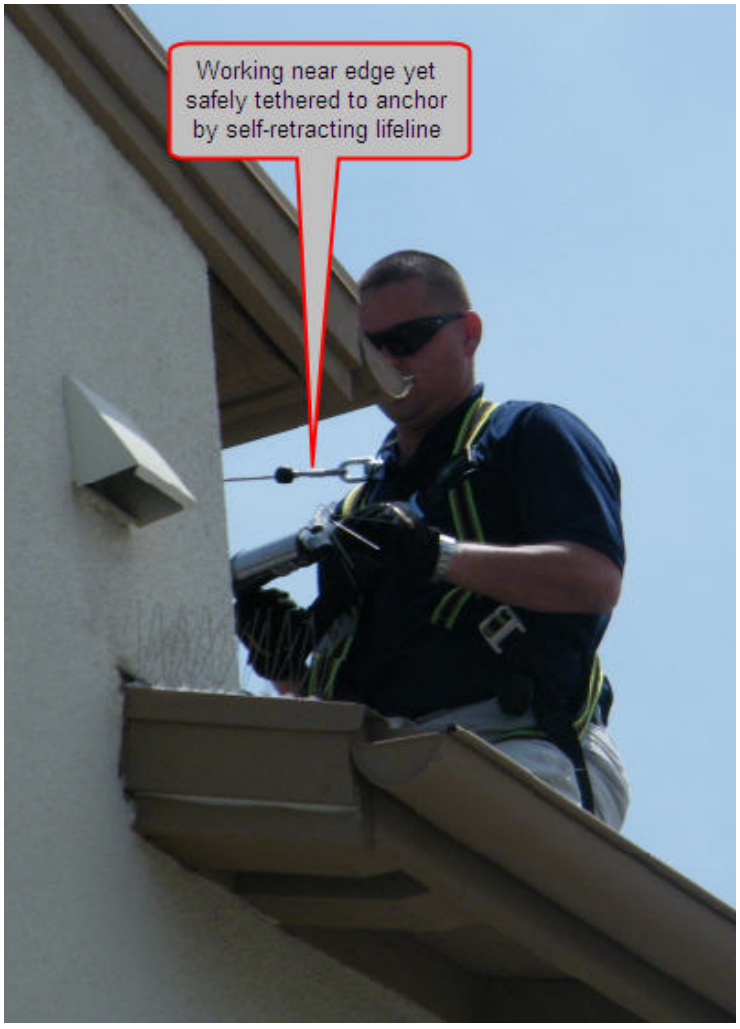



Work materials carried up by bucket and line. NOT carried up by hand while trying to climb the ladder.
Employee tied off with self-retracting lifeline.
Ladder secured to the roof so it will not slip.


Ladder Anti-Slip device for securing ladder to roof.


Multiple anchor points and multiple self-retracting lifelines that are used and arranged in strategic locations on top of the structure so that:
1) The employee can safely access all areas of the rooftop
2) The employee can leap-frog from one anchor point to another, always remaining hooked to at lest one anchor
3) Arranged to minimize or eliminate the possibility of swing hazards


Self-retracting lifeline remains taut, and will lock almost instantaneously if the employee falls.
This is a superior option than ropes an shock absorbing lanyards.


Working near edge yet safely tethered to anchor by self-retracting lifeline

GEOtech

Tomorrow's Solutions Today

GeoTech is your source for safety, construction and innovative integrated pest management tools for the pest management industry. Geotech can assist you with all fall protection tools from fall harnesses, self-retracting lifelines, fall rescue kits, ladder anchors, and other innovative tools and supplies.

For more information about fall protection and other supplies for pest control and construction industries contact Lawrence Reed or Josh Koenig.

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