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TRAINING SERIES



**XACTIMATE<sup>®</sup>**

**28**

*Fundamentals & Proficiency*

CH

# 7

- General Safety Precautions
  - Personal Safety Equipment
- Ladder Safety
- Safety Line Item Entries
- Roof Types and Styles
- Measuring a Roof for Sketch
- Calculating Roof Pitch
  - Smartphone / Tablet Apps
  - Manually Calculating Pitch

## Introduction to Roofing

### *Roofing Industry Knowledge and Standards*

#### Chapter Overview

If you have ever climbed up on a roof to measure it, it's quite the adventure. You need a ladder, a measuring tape, maybe a pen and pencil to jot down the measurements, and a good eye. Because roof estimating is one of the most dangerous tasks associated with property estimating, it is important to understand important safety requirements and to take the necessary safety precautions when measuring a roof.

#### Lesson Objectives

The lesson objectives for this chapter include the following:

- General Safety Precautions
  - Personal Safety Equipment
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Let's begin. ▶



## General Safety Precautions

Whether you are measuring a roof, repairing a roof, or involved in constructing an entirely new roof, it is important to understand and practice good safety precautions. Because of the heights involved when measuring or working on roofs, safety risks must be addressed. Depending on the type of roofing job you are doing, these safety precautions may include personal protective equipment, such as head and eye protection, harnesses, brackets and railings.

In addition, when measuring or working on a roof, ladder safety precautions are some of the most important safety precautions you can apply. And as you may be aware, many safety regulations are governed by law and are established to help protect the safety and health of workers.

Let's look at some of these safety precautions individually.

### Personal Safety Equipment and Protection

#### *Hard Hats, Gloves, and Safety Glasses*

Personal protective equipment can prevent a variety of injuries. Hard hats, gloves, and protective eyewear are designed to prevent or lessen the severity of injuries when working in areas where there is a potential for injury, including accidents from falling or projectile objects, as well as minor cuts, abrasions and splinters.

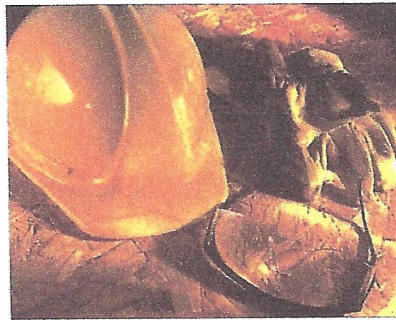


Figure 7.1 Personal Safety

#### *Safety Harnesses*

Personal fall protection devices such as full-body harnesses, are designed to save lives and reduce injuries while allowing the wearer to remain in an upright position after a fall. When working more than six feet from the next lower level, the Occupational Safety and Health Administration requires personal fall arrest systems, guardrails, or safety nets.

#### *Roofing Brackets and Railings*

To provide safe footing areas on sloped roofs, roofing brackets can be anchored to the roof to help prevent workers from slipping and sliding. Safety rail systems can be installed around the perimeter of the work area to separate workers from potentially dangerous fall areas near open areas and at the roof edges.

#### *Roof Surfaces*

Slip hazards are among the most potentially dangerous risks when building or repairing a roof. Workers should only walk on surfaces that can safely support them, and they should wear footwear designed to help reduce slipping. In addition, any open holes should be covered.

#### *Weather Conditions*

Weather conditions can also contribute greatly to the need for roof safety. Rain and snow can make the roof more slippery. Wind can also be a contributing factor, making it more difficult to maintain balance on a roof and to work with sheathing, flashing and shingles.



## Best Practices

- Good roofing boots should help you work safely on different roofing materials and in a variety of weather conditions.
- Boots should be flexible and cushioned, allowing you to walk on different inclines and roof surfaces.
- When working on a steep incline, low-cut boots or shoes should help prevent ankle and leg chafing.



# 7

## Ladder Safety

When working with ladders in construction areas, on restoration projects, or around the home for odd jobs, safety precautions should be used at all times. Preventing injury is a primary concern and following some simple rules can help ensure safety.

Let's identify a few safety precautions when using ladders, and then look at some possible line item entries for safety that may be found in an estimate.

### Ladder Placement

Make sure your ladder is stable by placing it on a level, dry surface. Place the ladder in a secure position and at an angle appropriate to support your weight and the load being carried.

Do not place the base of a ladder too close or too far away from the wall or building. A good rule of thumb is to measure the vertical distance from the support and place the horizontal distance at the base of the ladder at a ratio of one foot to every four feet of the vertical distance.

To help avoid accidents, make sure the areas around the ladder are kept clear. Avoid high-traffic areas and areas in front of doorways or other openings. Be aware of any machinery or moving vehicles that may be in close proximity to the working area.

### Other Safety Precautions

If you need to carry materials while climbing a ladder, use extreme caution. Consider hauling materials and tools with a line or rope rather than carrying them with you on the ladder.

Guard against any building materials, tools, debris, or other obstructions that could cause potential hazards in the working area or on the ladder rungs. Slippery liquids or debris from the work site can be transferred from footwear to ladder steps, creating additional safety concerns.

Use a ladder that is the correct size for the job at hand. Never tie ladders together. If extra height is required, be sure to use a ladder of the appropriate size to support the needed load capacity, and one that has the proper ladder rating.

The highest standing position on a stepladder should be at least the second step down from the top, or the fourth rung from the top of an extension ladder.

## Line Item Entries for Safety

The following list contains possible line item entries for safety. Although scaffolding is not generally used for roofing, it may be used to place bundles of shingles on the roof.

- SCF RNTHLD - Fall protection harness and lanyard - per day
- HMR PPEE - Eye protection - plastic goggles - disposable
- TOL PSE - Eyeshields, Protective
- SCF LDR40 - 40' aluminum extension ladder (per day)
- TOL LSSS - Scaffolding
- SCF RENTD - Scaffold - per section (per day) or SCF RENTW - (per week)
- SCF SECT - Labor to set up and take down scaffold - per section

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## Best Practices

- Keep ladders at least 10 feet from power lines.
- Select the right ladder size for the job.
- To prevent foot fatigue, wear shoes with heavy soles that are slip-resistant.
- Ladders are for climbing, and not intended as a working platform. Leaning to one side or over-reaching can cause the ladder to become unbalanced.

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Revision 5-29-2013