

Flat Roof Maintenance

Course 366: Flat Roof Maintenance

Introduces roofing, including flat roof systems and various types of decks. Examines insulating and water-proofing materials, and techniques of application. Discusses roofing damage, how to repair roofs, and how to make a proper roof inspection. Explains types of preventive maintenance, how to plan preventive maintenance, and how to select the proper materials to use.

TPC Training is accredited by IACET to offer **0.6 CEU** for this program.



Lesson 1: Introduction to Flat Roof Systems

Topics

Introduction to Roofing; Flat Roof Systems; The Structural Deck; Wood Decks; Concrete Decks; Steel Deck; The Vapor Barrier; The Thermal Insulation; Where to Place the Insulation?; The Waterproofing Membrane; Waterproofing Materials; Building Up the Membrane; Aggregate and Flood Coats; Service Walkways

Objectives

- Name and define the four basic components that make up a flat roof system.
- Explain the differences among a pre-stressed concrete deck, a pre-cast deck, and a reinforced deck.
- Explain the functions of a vapor barrier.
- Tell why thermal insulation is applied above deck in some applications, and below deck in others.
- List three benefits of coating a flat roof with aggregate or crushed slag.

Lesson 2: Roof-Related Components

Topics

Why a Flashing?; Description of Flashing; Base Flashings; Counter Flashings; Flashings for Vents; Flashings for Irregular Roof Penetrations; Flashings for Pitch Pockets; Expansion Joints; Roof Drainage Systems; Gutters; Roof Sumps; Interior Drains; Gravel Stops; Raised Edge Flashings; Parapet Walls; Scuppers; Conductor Heads; Downspouts

Objectives

- Explain how a base flashing and a counter flashing work together to protect a roof.
- Tell how and why a hot vent is usually flashed differently from a cold vent.
- Name three roof conditions that make it necessary to install expansion joints.
- Describe how the components of a flat roof drainage system work together
- Tell how to keep moisture out of parapet walls.

Lesson 3: Causes of Common Roof Problems

Topics

Why Does a Flat Roof Leak?; Failure of Roofing Membrane; Bare Spots; Blisters; Ruptures or Punctures; Splits; Membrane Slippage; Dirt and Debris; Alligatoring; Failure of Roofing Components; Results of Poor Installation; Ponding on a Flat Roof; Venting Damp Insulation; Roof-Mounted Equipment; Preventing Roof Problems

Objectives

- Describe the causes of blisters, bare spots, and punctures.
- Explain how dirt and debris create maintenance problems on flat roofs.
- Name the most common reasons for vent flashing failure.
- List the steps to take to prevent water from ponding on a flat roof.
- Tell how to set heavy equipment on a flat roof without damaging the membrane.

Lesson 4: Roof Inspection

Topics

The Bonded Roof; The Need for Roof Inspection; Inspecting a Roof Under Construction; Selecting the Inspector; Making the Inspection; Inspecting a Roof in Service; Before the Inspection; Making the Inspection—Indoors; Is It Asphalt or Coal Tar?; Making the Inspection—Outdoors; Hidden Sources of Trouble; Inspecting the Roof Membrane; Moisture in the Roof

Objectives

- Tell what a roofing bond or guarantee usually covers and doesn't cover.
- List the materials and information that a roof inspector should have for his guidance.
- Describe two ways of telling whether the roofing bitumen is asphalt or coal tar.
- Explain how water can seep through roof penetrations, pitch pockets, and parapet walls.
- Describe a simple means for measuring the moisture content in a roof system.

Lesson 5: Preventive Maintenance and Repair

Topics

Planned Preventive Maintenance; Types of Preventive Maintenance; Materials for Preventive Maintenance; Maintaining the Roofing Membrane; Bare Spots; Blisters; Roof Vents for Removing Moisture; Ruptures and Punctures; Splits; Maintaining Flashings; Maintaining Pitch Pockets; Maintaining Drains and Gutters; Maintaining Parapet Walls; Making Emergency Repairs; Effects of Snow and Ice; Be Prepared!; Safety on the Roof

Objectives

- Name the basic materials that should be stocked for making roof repairs.
- Tell how to repair a split membrane if sealing tape isn't available.
- Describe how to repair a hole in a base flashing.
- Explain how moisture can cause a parapet wall to crack and crumble.
- Explain how to channel a roof leak to a floor drain.
- Describe how to use tools, ladders, and hoists safely when repairing roofs.

Lesson 6: Single-Ply Roofing

Topics

What Is Single-Ply Roofing?; Thermoplastic Polymers; Elastomers; Modified Bitumen; Roof-Laying Methods; Installation and Maintenance; Inspection Checklist

Objectives

- Name and describe the three types of single-ply roofing materials.
- Detail the roof-laying methods used with each of these types.
- Identify actions that would void a typical roof warranty and explain why it is important to keep the warranty in effect.
- Explain the six key points that should be checked in the inspection of a single-ply roof.