

# ATRF-2130: STEEP SLOPE ROOFING III

## Cuyahoga Community College

**Viewing: ATRF-2130 : Steep Slope Roofing III**

**Board of Trustees:**

1/30/2025

**Academic Term:**

Spring 2025

**Subject Code**

ATRF - Applied Industrial Technology - Roofing

**Course Number:**

2130

**Title:**

Steep Slope Roofing III

**Catalog Description:**

Covers installation of wood shingles and wood shake roofs, slate and tile roofs.

**Credit Hour(s):**

2

**Lecture Hour(s):**

2

## Requisites

**Prerequisite and Corequisite**

Departmental approval: admission to Roofer's Apprenticeship program.

## Outcomes

**Course Outcome(s):**

Prepare job site for installation of a wood shingle, wood shake, slate or tile roof.

**Objective(s):**

1. Identify the grades for wood shingles and wood shakes.
2. Describe the difference between a wood shingle and wood shake.
3. Identify the three types of wood shake.
4. Identify any possibly future issues in the decking prior to installation.
5. Describe the proper installation pattern, spacing Length and exposure.
6. Identify the various types of slate used.
7. Identify the proper fastener needed for various wood shingles and shakes.
8. Explain how to install the wood shingles, shakes, slate or tile based on the manufacturer's instructions.
9. Explain how to determine if a slate tile is cracked.
10. Identify the proper tools for slate roofing.
11. Identify the various tiles used for roofing.
12. Explain the porosity of tile material used.
13. Describe the advantages and disadvantages of using wood shingles, wood shake, slate or tile roofing materials in accordance with job site specifications.

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**Course Outcome(s):**

Install wood shingles, wood shake, slate or tile roofing materials in accordance with job site specifications.

**Objective(s):**

1. Demonstrate various methods of installing Wood shingles, shakes, slate or tile.
2. Select appropriate material based on jobsite specifications.
3. Fasten underlayment according to job specifications (nail vs. staple)
4. Determine if underlayment will be exposed and the need to secure.
5. Determine if a deck is properly prepared for the specified roofing material.
6. Discuss proper storage for unused materials.
7. Demonstrate how to install proper flashing used against walls, chimneys, pipe or other roof penetrations made of lead or copper when installing Wood shingles, shakes, slate or tile.

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**Methods of Evaluation:**

1. Quizzes from Roofer's International Training Resource Center
2. Exams from Roofer's International Training Resource Center
3. Hands-on projects
4. Participation

**Course Content Outline:**

1. Decking
  - a. Proper for material
  - b. Inspection
    - i. Proper nailing
    - ii. Defects
      1. Warped boards
      2. Loosened layers of plywood
      3. Rotten wood
2. Ventilation
  - a. Types
  - b. Placement
  - c. Requirements
    - i. Wood shingle and shake roofs
    - ii. Slate roofs
    - iii. Tile roofs
3. Underlayment
  - a. Types
  - b. Installation techniques
  - c. Compatibility with ventilation
  - d. Impact on energy efficiency
4. Flashings
  - a. Materials
  - b. Type used for install wood shingles, wood shake, slate or tile roofing materials in accordance with job site specifications.
  - c. Around
5. Fasteners
  - a. Types
    - i. Nails vs. screws
    - ii. Specialty fasteners
      1. Stainless steel
      2. Galvanized
  - b. Proper length and diameter for roofing materials
  - c. Correct spacing and placement
  - d. Nailing patterns for various roofing materials
  - e. Use according to manufacturer's specifications
6. Fittings
  - a. Tile
  - b. Slate
7. Shingles
  - a. Wood
  - b. Wood Shakes

- c. Slate
- d. Tile
  - i. Shingle tile
  - ii. Pan and cover tile
  - iii. S-Tile
  - iv. Roman & Greek
  - v. Interlocking
    - 1. Porosity – how much water a tile will absorb

## Resources

Roofers' and Waterproofers' Research and Education Joint Trust Fund. . *Steep Slope Roofing*. . Roofers' and Waterproofers' Research and Education Joint Trust Fund. , 2020.

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Roofers' and Waterproofers' Research and Education Joint Trust Fund. . *Roofer's Safety and Health Manual*. Roofers' and Waterproofers' Research and Education Joint Trust Fund. , 2018.

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Roofers' and Waterproofers' Research and Education Joint Trust Fund. . *Fall Prevention and Protection for Residential Roofing*. Roofers' and Waterproofers' Research and Education Joint Trust Fund. , 2021.

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National Roofing Contractors' Association. *Roofing Materials Guide - Residential Steep Slope Roofing*. Roofing Contractor's Association, 2021.

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## Resources Other

1. *Roofer's Training Resource Center*. Rooferstrc.com. 2024
2. *Roofing Materials Guide, Residential Steep Slope NRCA 2021*
3. *Video "guide to cedar roofing" Cedar Shake and Shingle Bureau*
4. *Roofers Safety and Health Manual, 2018*

Top of page

Key: 5313