

EFI/Vale Specialist – Program for Roofing systems

This 4 day course will provide students who pass the 50 question final examination and meet the experience/educational requirements of the EVS/Roof program an EVS/Roof certification (EVS/R).

This certification program provides detailed information on the following:

Steep Slope roofing systems including:

- Shingles
- Clay Tile
- Wood Shake
- Slate
- Architectural Metal Panel/Metal shingle

Low Slope roofing systems:

- Single Ply PVC, TPO, and EPDM
- Built Up roofs including Modified Bitumen, Coal Tar Pitch or Asphalt BUR, Ceramic Granule surface, Flood Coat and gravel, Aluminum Oxide Emulsion

Roof design considerations, including: wind pressures, penetration and edge treatment, insulation, emissivity, drainage and environmental damage to roofing systems.

Building code and legal considerations, industry standards and manufacturer/association recommendations. Industry standards based on:

- International Building Code (Commercial)
- International Residential Code (One and Two Family)
- International Energy Conservation Code
- National Roof Contractors Association
- The Asphalt Roofing Manufacturers Association
- National Tile Roofing Manufacturers Association
- Western States Roofing Contractors Association
- Tile Roofing Institute

Mechanism of moisture penetration of the building envelope including rain, wind driven, advection and diffusion.

Mechanics of wind, how it is measured and its impact on roofing systems.

Storm damage assessment is reviewed in detail so that the student will understand the basic mechanics of storm related damage and be able to differentiate storm damage from mechanical, manufactured and construction related defects. It includes explanation of functional damage, modes of failure with specific examples of each, how hail is formed and the velocity and energy associated with various types

and sizes of hail. The course instructs how hail damage causes cosmetic distress and includes corroborating evidence with specific examples provided for each roofing material/system. Students learn how to complete a qualitative evaluation to confirm and delineate hail damage and how to determine if the amount of damage warrants repair or replacement.

This course covers the basics of roof measuring and estimating for each of the low slope and steep slope systems. This includes the protocols for handling and completing site inspections, as well as, obtaining the background and information on the roof issue and claim. The course reviews proper methods for completing research and analysis on roofs before and after inspection.

The course provides detailed information and examples of qualitative water intrusion evaluations including the following tests to determine if a prescribed condition will leak and where.

- spray rack testing
- water penetration testing
- negative pressure uplift testing
- capacitance testing
- nuclear moisture testing
- low voltage electrical testing
- high voltage electrical testing
- infrared thermography

The course provides specific information on how infrared thermography is used during inspections. Cases from actual engineering studies are used to show various conditions that can be identified with this method. Information on destructive and laboratory testing including core sampling process is also covered.