



- Start Immediately
 - Available 24/7
 - Come and go as you please
 - Print certificate upon completion
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Envelope Failure: A Better Weatherization Design

Course # AIABLT201

Credit(s) earned on completion of this course will be reported to AIA CES for AIA members. Certificates of Completion for both AIA members and non-AIA members will be available to print upon completion of this course. This course is registered with AIA CES for continuing professional education.

Course Description

Building homes that are well protected from the weather should be a priority for any building professional. The majority of problems stem from improper procedures and workmanship, but often the problem is found in the design of a home. This three hour continuing education offering will explore factors that contribute to exterior shell failure, and identify practical solutions that will preserve the integrity of the building envelope.

After completing this course participants will be able to:

- Identify the components of the building as a system, its performance requirements, and how these features must be integrated to prevent building envelope failure.
- Describe how a properly constructed building envelope will keep out weather related moisture and stop uncontrolled movement of energy due to loss of conditioned air.
- Outline at least one design strategy based on "best practices" for the construction of buildings in areas with relatively high humidity.
- Summarize the options available to the consumer that may have been injured by, or suffered a financial loss by construction defects and the resultant failure of the building envelope.

Course Syllabus

Weatherization I

Building Exterior Shell Training

***Learning Objective:** Explore how poor building practices are often contributing factors to exterior shell failure, and identify practical solutions that contractors can apply to improve overall workmanship.

1. Rationale
2. Primary Warranty and Insurance Claims
3. Solutions
4. Experience
5. Contractor Responsibilities
6. Insurance Availability and Affordability

Assessment

Building Envelope System

***Learning Objective:** List the four major physical components of the building envelope system, the performance objectives of those components, and the specific mistakes that result in system failure.

1. Building Envelope System
2. Performance Objectives
3. Physical Components
4. Sources of Moisture Intrusion
5. Results of Failure

Assessment

Foundation Construction

***Learning Objective:** Identify and implement proven methods that will effectively divert moisture from the foundation of a structure.

1. Thermal and Moisture Protection
2. Groundwater
3. Gutters
4. Crawl spaces
5. Damp proofing and Waterproofing
6. Girders and Beams

Assessment

Weatherization II

Wall Construction

***Learning Objective:** Determine causes of high humidity in a structure and evaluate wall construction "best practices" to maximize performance.

1. Wall Framing
2. Vapor Diffusion Problems
3. Recommendations
4. House Wrap and Underlayment
5. Window and Door Openings
6. Flashing and Caulking
7. Siding

Assessment

Roof Construction

***Learning Objectives:** List and describe at least three specific installation techniques and/or materials that contribute to a properly constructed roof system.

1. Skylights
2. Moisture Penetration
3. Roof Valleys
4. Shingles and Shakes
5. Roof Sheathing
6. Repairs
7. Flashing

Assessment

Window and Door Installation

***Learning Objective:** Demonstrate proper window and door installation techniques that preserve the integrity of the building envelope.

1. Windows, Doors and Skylights
2. Proper Flashing
3. Door and Window Installation

Assessment

Weatherization III

Ventilation System Installation and Requirements

***Learning Objective:** Summarize the key elements (either natural or mechanical) of a properly ventilated structure.

1. Code
2. Attic Ventilation
3. Heating, Ventilation and Air Conditioning

Assessment

Building Envelope Best Practices

**Learning Objective:* Cite at least four "best practices" and describe how these strategies support an effective envelope design.

1. Moisture Retarding Construction
2. Capillary Breaks
3. House Wrap Installation
4. Window and Door Installation
5. Siding Installation
6. Roofing Best Practices

Assessment

Consumer Remedies

**Learning Objective:* Correctly identify preventative measures that should be taken by both the consumer and the contractor to reduce disputes surrounding envelope failure.

1. Common Mistakes
2. Preventative Measures
3. Warranties
4. Complaints
5. Arbitration and Dispute Resolution

Assessment

Course instructors will be available by email or telephone between 9am and 5pm Eastern Standard Time. They will assist you with questions regarding course content.