BUILDING EXTERIOR SHELL TRAINING

Course Handout

Part 1 – Background and Insurance Issues (19min)

Causes of Building Exterior Shell Problems

- Bad Design
- Poor Planning
- Failure to Follow Manufacturer's Recommendations
- Post-Construction Installations Compromising Shell

Primary Claims

- Damage to Exterior
- Window and Door Leaks
- Mold and Mildew
- Structural Failure

Effects on Contractors

- Increased Warranty Costs
- Callbacks
- Litigation
- Higher Insurance Rates
- Reduced Profits

Insurance Availability and Affordability – WB Adams Company

- Claims and Litigation Due to Moisture Damage
- Homeowner vs. Contractor Maintenance Responsibilities
- Increased Exposure Due to 10-year Warranty

Solutions Proposed by Construction Claims Task Force

- Changes in State building code and Permit Process
- Enhanced Enforcement Authority for CB
- Increased Notification and Assistance Fund for Consumers
- Continuing Education for Contractors

Solutions - Contractor Education in Basic Fundamentals

- Sound Design
- Reliable Construction
- Envelope Maintenance

Contractor Responsibility

- Proper Training of Employees and Subcontractors
- Supervision of Building Materials and Systems Installations
- Excessive Problems Jeopardize Contractor's License

Part 2 – Walls and Siding (40min)

Building Envelope System Definition: The part of a building that separates the interior, conditioned space from the exterior, non-conditioned space.

Components:

- Foundation
- Walls
- Roof
- Windows
- Doors

Major Performance Objectives

- Structural Integrity
- Moisture Control
- Temperature Control

Sources of Moisture Intrusion

- Snow and Ice
- Rainwater
- Ground and surface Penetration
- Condensation
- Moisture in Building Materials

Results of Building Envelope Failures

- Mold and Mildew
- Rot
- Stains
- Insects
- Paint failure

Wall Construction Best Practices – Lifetime Remodeling Systems

- Lumber Moisture Content
- Moisture Resistive Barriers
- Deck-to-Wall Transition
- Self-Sealing Cap Staples
- Self-Adhesive Membrane Lap Flashing System
- How Rain Screen Technology Works
- Window Trim and Z-Metal Flashing
- Fiber Cement Siding Installation and Back-Flashing
- Cedar Siding Installation
- Hemmed Edge L-Metal Wall-to-Stairs Flashing
- Siding Proximity to Grade
- Electrical Box and Faucet Penetration

Part 3 – Windows and Doors (25min)

Window and Door Installation Best Practices – Ames Contracting Services

- American Architectural Manufacturers Association Method A
- Composite Shims
- Modified I-Method
- Weather Resistant Barrier
- Flexible Pan Flashing
- Application of Sealant
- Drainage and Weep Holes
- Self-Adhesive Flashing Tape
- Checking Level, Plumb and Reveal

Part 4 – Roofs (36min)

Roof Construction Best Practices – Aylwin Construction

- Cedar Shake Replacement with Composition Shingle
- Gutter and Drainage Problems
- Moisture Damage and Prevention
- Proper and Improper Vent Pipe Penetrations
- Proper and Improper Flashing and Caulking
- Roof-to-Wall Metal Step Flashing
- Drip Edge and Gutter Drainage
- Ice and Water Shields
- Plywood Sheeting and Felt Underlayment
- Metal Valley Installation

Part 5 – Ventilation and Foundations (40min)

Ventilation Systems Best Practices – Pyramid Heating & Cooling, Square Deal Remodeling

- Bathroom Ventilation
- Clothes Dryer Exhaust Ventilation
- Kitchen Hood Exhaust and Negative Air Flow
- Duct Location and Sealing
- Wall and Roof Penetrations
- Open and Closed Combustion Systems
- Heat and Energy Recovery Ventilation Systems
- Common Ventilation Mistakes

Foundations and Basements

- Types of Foundations
- Basement Waterproofing
- Drainage Systems
- Land Grading

Foundation Systems – Concrete Lifting Solutions

- Foundation Damage Due to Failed Downspout
- Wall Damage Due to Foundation Failure
- Failure of Perimeter Drainage System
- Drainage for Sloped Lots and Basements

Examples of Moisture-Retarding Construction Practices

- Self-Sealing Cap Staple System
- Moisture Meters
- Primer on Siding Surfaces
- Composite Shims
- Window and Door Pans
- Ice and Water Shields

Examples of Moisture Retarding Construction in a Basement

- Mold-Resistant Vapor Barrier
- Water-Resistant Drywall
- Floor Sealing Paint
- Silicone Caulk
- Basement Dehumidifier

Available Remedies

- Warranties Required for New Construction
- Consumer Notice of Defect Prior to Initiating Action
- Contractor Notification to Involved Subcontractors
- Contractor Entitled to Inspect Alleged Defect
- Contractor Must Remediate, Compensate, or Deny
- Consumer Complaint for Negligence, Bad Work, or Breach of Contract
- CCB Mediation or Order to Compensate Homeowner
- Claims Against Surety Bond and Contractor Liability Policy
- Arbitration or Court Action Against Contractor

QUESTIONS?

Any questions or comments regarding this course may be directed to Oregon Contractor Education via mail, phone, or email. Your question will be directed to the appropriate expert depending on the subject matter, and you will usually receive a reply within 48 hours.

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