AIA/CES - Walls That Work
CES Credits - 3.0 (no HSW credit)

Introduction
- What is the function of insulation?
- How insulation does or does not perform its function.
- Corrections to common failures of insulation systems
- What is "Climate Isolation"?
- What products perform Climate Isolation?

Section 1: Six Mechanisms of Heat Loss
- Conduction
- Radiant heat loss
- Convection currents
- Air infiltration
- Wind intrusion
- Moisture accumulation

Section 2: Fact Sheet
- R-Value of Corbond based on C-518

Section 3: Efficiency Test
- There are three ways of looking at insulation: R-Value, Efficiency, Performance
- Efficiency and Performance - not just R-value
- Description and explanation of efficiency test
- Efficiency vs.
- Corbond is a linear product - easy to predict its efficiency

Section 4: U value vs. R-value
- U is heat flow. R-value is 1/u

Section 5: Comparative R-values of Different Insulation Products
- Some products' R-values are "installer sensitive"

Section 6: Convection
- Heat pickup and deposit to the outdoors
- How convective loops form in walls
- How setback thermostats can cause convection currents
- In cold weather, convection currents become more acute - thus, the effective R-value drops significantly
- Moisture accumulation - heated air picks up moisture
- Cooling air drops moisture
- Inside the wall, heat and moisture migrate from inside the envelope and deposit on the back of sheathing

Section 7: Air Infiltration/Intrusion
- Why Corbonding rim joists is so effective
- Air intrusion into the building envelope
- The interior vapor barrier defines the line between interior and exterior
- A vapor barrier doesn't stop the wind that robs R-value (your heat) from the cavity

- We can't count in R-value alone - effective performance is what matters

Section 8: Moisture
- How dew forms
- Psychrometric chart
- Frost will cut air infiltration, but the cost is very high; it takes a huge amount of energy to melt and evaporate the frost
- Analysis of graph - fiberglass wall test
- Analysis of graph - Corbond wall test

Section 9: Climate Isolation
- We have traditionally mixed the interior and exterior climates (this is insulation)
- Building envelope degradation
- Certain climates see worse deleterious effects
- Air conditioning season - the vapor barrier is now on the wrong side
- How Corbond works - it isolates
- The inside doesn't know what the outside is doing

Section 10: Field Performance
- Performance comparison graph
- What really matters is an insulation's behavior in real-world situations

Section 11: Product Differentiation
- Chemistry
- What's the difference?
- Labeling codes

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