Deck safety and building code issues on the horizon – Turning challenges into product opportunities

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Deck and porch safety continues to be a national problem. Many deck collapses resulting from gravity loads have been reported in the public media. Research at Virginia Tech and Washington State University led to changes in the building code regarding deck ledgerboard attachment to the building and guardrail attachment to decks and porches. Many companies in the decking industry closely tracked these code requirements and were quick to market with new decking and connection hardware products that addressed the concerns.

More recently, researchers at WSU have studied lateral loading on decks from seismic and wind, as well as from people. It turns out that lateral loads from occupant movement can exceed those from extreme wind and seismic events. Seismic and wind loading are limited to parts of the country that have high risk (e.g. south Florida for wind); however, lateral loads from occupants can occur *anywhere* and *anytime* that there are people on the decks.

This presentation will show how occupants initiate lateral loads, and how the deck materials, construction and geometry have dramatic effects on dynamic amplification of the loads. Understanding this phenomenon opens many possible product possibilities to stabilize deck structures, reduce dynamic loads, transfer loads from decks to primary building, and improve durability.

As with our earlier work on deck ledgers and guardrails, this research will likely have implications on building codes throughout the US. This presentation will give an early “heads up” to those companies that provide decking products.