

HB 307

BUSINESS LABOR
EXHIBIT NO. 6
DATE 3-4-11
BILL NO. HB 307

NEWER HOMES AND FIRE

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Opponents of residential fire sprinkler systems like to boast that newer homes are safer homes and that the fire and death problem is limited to older homes. Age of housing is a poor predictor of fire death rates. When older housing is associated with higher rates, it usually is because older housing tends to have a disproportionate share of poorer, less educated households. Statistically, the only fire safety issue that is relevant to the age of the home is outdated electrical wiring. Beyond that, age of the home has little to nothing to do with fire safety.

In fact, new methods of construction negatively impact occupant and firefighter life safety under fire conditions. The National Research Council of Canada (NRC) tested the performance of unprotected floor assemblies exposed to fire. The findings of the study, *The Performance of Unprotected Floor Assemblies in Basement Fire Scenarios* assert that these structures are prone to catastrophic collapse as early as six minutes from the onset of fire.

In 2008, Underwriters Laboratories® (UL) conducted a study to identify the danger to firefighters created by the use of lightweight wood trusses and engineered lumber in residential roof and floor designs. The findings of the report, *Structural Stability of Engineered Lumber in Fire Conditions*, point to the failure of lightweight engineered wood systems when exposed to fire. Firefighters expecting thirty minutes of structural integrity with dimensional wood structures face higher peril in lightweight structures.

The same UL study found that the synthetic construction of today's home furnishings add to the increased risk by providing a greater fuel load. Larger homes, open spaces, increased fuel loads, void spaces, and changing building materials contribute to:

- Faster fire propagation
- Shorter time to flashover
- Rapid changes in fire dynamics
- Shorter escape time
- Shorter time to collapse

Lightweight construction has been variously estimated to be used in one-half to two-thirds of all new wood one- and two-family homes. Fire sprinklers can offset the increased dangers posed by lightweight construction and create a safer fire environment for firefighters to operate in.