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Structural Stability of Engineered Lumber

by Gregory Havel

A few weeks ago, WISN-TV Channel 12 in Milwaukee WI included a news story on structural collapse, with interviews of two Milwaukee firefighters who survived a collapse; and a live-fire demonstration by Tom Schlei of Waukesha County Technical College comparing the performance of conventional lumber joists with manufactured wood I-beams. The video can be viewed at <http://www.wisn.com/video/17971947/index.html>

Underwriters Laboratories has released an on-line course titled "Structural Stability of Engineered Lumber". This was produced with a grant from the Department of Homeland Security, and with the assistance of the International Association of Fire Chiefs (IAFC), the Chicago Fire Department, and Michigan State University. It shows the same joist behavior as the WISN-TV video, but with the multiple videos and detailed instrumentation and documentation than only a facility like UL can provide.

It includes introductory material, details on the ASTM E119 test methods and instruments, and photos and videos of tests of different types of floor-ceiling assemblies. Videos show simultaneous frames of video above the assembly; below the assembly within the furnace; infra-red video above the assembly; and video from within the floor-ceiling assemblies. It includes a module on fire behavior specific to drywall ceiling, wood I-beam, and wood truss construction.

Also included are modules on the interpretation of images viewed in Thermal Imaging Cameras; the relationship of the UL tests to current building and fire codes; and recommendations for updating the residential building codes.

This is well worth an hour of your time, and can be used to supplement instructional materials in Firefighter I, Firefighter II, and Building Construction courses. It should be viewed and understood by every firefighter and fire instructor.

This on-line course can be viewed at <http://www.ul.com/fire/structural.html>

If the direct link does not work:

- www.ul.com
- Click on "UL News"
- Click on "Earlier News Items"
- Click on "November 6, 2008 Structural Stability of Engineered Lumber in Fire Conditions On-Line Course"

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