

# SAFETY BULLETIN

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One of our off duty firefighters was at an occupancy in a neighboring mutual aid departments district and ran across this interesting building construction technique. This certainly caught his attention and mine as well once he sent me the pictures. It is bad enough that we have to worry about lightweight construction being used, now we have to worry about poor techniques while using lightweight (LW) construction. Although I have not seen this in our response district, it is a building technique being used.



Below are pictures from the facility that he took and a description accompanying it.

In this picture, you can see the LW wood truss system spanning a large distance with no structural support posts or columns. 2" x 4" upper and lower chords (laying flat) with metal rod webbing. Metal "I" beam in the ridge area with "I" beams for the structural columns. Orientated strand board roofing decking adorns the top.



This is where I am amazed and we all should be frightened. As constructed only the upper chord of the LW assembly is attached to anything that is structural. The upper chord is resting on top of the exterior walls (which they stated is filled with rebar and mortar) and the lower chord doesn't even touch the wall, which would not help with carry the load. The employees stated that when the roof has snow on it, the bottom chord will then touch the exterior wall.



In this picture you can see the trusses are only attached to the top of the "I" beam via the upper chord. Also the lighting is attached to the bottom chords. Again, lightweight construction works as designed but when being attacked by the products of fire, they do not withstand the attack and WILL fail. In the words of Vincent Dunn, "Never Trust a Truss".