



Position Statement

The Use of Cross-Laminated Timber in the Construction of Tall Wood Buildings

The fire service for years has warned of the use of combustible materials in construction methods. How buildings are constructed can aid in the limiting of fire spread, protect occupants in a time of a disaster and serve to withstand conditions in which our firefighters can operate. The use of cross-laminated timber (CLT) is not a completely new concept as it has been in use for lower height buildings for a number of years.

In 2017, the International Code Council (ICC) created an ad hoc committee to evaluate possible code changes for the 2021 editions of the ICC family of codes. This process performed five (5) fire demonstrations, multiple conference calls and in-person meetings of the committee. The committee reviewed numerous items that included allowable heights and areas for new buildings and applicability within the International Building Code (IBC). The testing has shown that the material is strong and has capabilities similar to other types of construction. During the 2018 Code Development process of the International Code Council, slight modifications were made to allow CLT lumber to be equivalent to Type IV - Heavy Timber construction which led to the development of the ad hoc committee.

Draft proposed code changes (14 changes) have been submitted by the ad hoc committee to the ICC for the 2021 code development process with the ICC. After careful review it has become apparent that the changes are overreaching and lack true technical support for many concepts proposed.

- Details on safeguards during construction have not been adequately addressed. We have seen the difficulty in protecting buildings under construction or stick built construction. The fire service capabilities of a tall-wood building are not part of the code and could easily exceed the capabilities of the responding fire service without building protection (automatic sprinklers, interior partitions, etc.)
- The proposals lack a complete technical basis for height and stories utilized in the changes. There has been discussion that this type of construction has a fire-resistive rating similar to that of concrete typically used in fire-resistive and noncombustible construction, although it has not been fully justified. The data is derived from the previously mentioned fire demonstrations.
- The proposals provide a greater per floor area increase than what is allowable for buildings constructed of concrete and steel. Technical justification has not been provided to substantiate the increase in these areas.

- Although changes have been made to adhesives utilized in creating the CLT panel; limited information has been provided regarding the life expectancy of this product. There is little detail regarding elemental effect, effect under greater load, reaction to the effects of fire while under load. The five (5) fire demonstrations provide limited data and does not paint a full picture of what the proposed changes are recommending.

The fire service has a duty to respond to incidents for the life of the buildings. These proposals appear to not be in full disclosure and lack aspects of technical support and justification for the concept as a whole. Comparisons between CLT, Heavy Timber and Non-Combustible construction lacking the technical merit to make such assumptions in the code development process.

In responding to combustible structures under fire conditions, time is of the essence. In a number of metropolitan cities, the staffing levels will permit an adequate short-term response to initiate suppression operations on upper levels of a high-rise building in a relatively short period of time. A major consideration for our membership is that the vast majority of our jurisdictions around the country and internationally lack the response capabilities to effectively initiate an effective suppression effort in the same relatively short time period. This raises a number of concerns for occupant and firefighter safety.

The International Association of Fire Chiefs (IAFC) urges the various code development committees and the membership to vote "**no**" on these proposals in their current form.

Submitted by: IAFC Fire & Life Safety Section
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