



The Concrete Industry's Campaign Against Mass Timber Undermines the ICC Process and the International Building Code.

Mass timber is not new to the International Building Code (IBC). Currently listed as Type IV Heavy Timber, mass timber panels are a proven option that fully complies with the structural and fire resistive requirements of the IBC. The model code recognizes that mass timber is fundamentally different than dimension lumber used in various “stick built” applications. The inherent fire resistance of mass timber, where charring in a fire event protects the inner structure of mass timber elements and a consistent and predictable rate of charring, are well known and carefully studied.

For these reasons, as well as attractive strength-to-weight properties, construction efficiency, cost, safety and environmental considerations, the market has embraced mass timber. Many successful tall mass timber buildings have already been built. Right now, 35 proposals for tall mass timber buildings, ranging from 7-24 stories, are pending in 21 jurisdictions.

This has not been welcome news for the Portland Cement Association (PCA) and the National Ready Mixed Concrete Association (NRMCA). Citing a potential loss in market share, both groups have launched a “Stop Tall Wood” campaign that claims mass timber is “untested, unsafe and unsound.” Their campaign argues that the American public is “uncomfortable” with wood as a construction material and that the International Code Council (ICC) process to ensure that the model code fully contemplates tall mass timber buildings is, therefore, misguided.

The concrete industry campaign misses the mark and, unfortunately, they would leave the International Building Code (IBC) less relevant if they succeeded in undermining the ICC code process.

First, the concrete industry ignores the fact that the purpose of the IBC is to provide code officials with the tools they need to ensure safety in the built environment. The IBC is not a tool to carve out market positions for any material or any industry. The ICC code development process, supported by the best science, has rightly resisted these industry-centered appeals.



Second, tall mass timber buildings have been and are being built now, under local codes and processes. However, the IBC doesn't currently provide guidance for this type of construction. The ICC recognized the importance of keeping the IBC relevant by appointing the “Ad Hoc Committee on

Tall Wood Buildings” to comprehensively study the science of mass timber and to recommend code changes to ensure safety.

The Committee, including code officials, fire service members, fire protection engineers, fire chiefs, architects, structural engineers, and representatives from materials interests, undertook two years of study, including full-scale fire resistance testing at the federal ATF fire lab, to fully understand the science of mass timber. The resulting code proposals specify extensive fire protective measures throughout the construction process.

Finally, the PCA and NRMCA claims are simply incorrect. The fire resistance ratings of the proposed Type IV (A, B and C) construction meet or exceed the performance of Type I-A or I-B construction, including concrete and fire-protected steel. Moreover, additional requirements take a conservative approach to ensure safer job sites, engagement with local fire services, non-combustible protection of exterior and interior surfaces, redundancy in active fire protection systems (sprinkler systems). Notwithstanding scare tactics by concrete, anyone interested in the facts will find that a full record of Committee deliberations, research results, the history of years of fire resistance testing, and testimony are easily available on the ICCSafe website.

In fact, the fire resistance of mass timber elements have been tested at national laboratories using ASTM E119 standards over a period of years. Recent 2017 testing of full-scale mass timber structures at the federal ATF fire laboratory have confirmed the inherent fire resistance of mass timber panels. For example, tests that assumed the unlikely failure of sprinkler systems produced excellent performance:

Test 1: A fully protected mass timber multi-level apartment with a full fuel load of household contents self-extinguished after 3 hours with no significant charring on mass timber surfaces;

Test 2: A partially protected mass timber multi-level apartment with a full fuel load of household contents was concluded after 4 hours. Mass timber self-extinguished;

Test 3: A fully exposed mass timber multi-level apartment with full fuel load of household contents. Fuel burnout at 4 hours, mass timber self-extinguished.

These most recent tests add to a long record that resulted in mass timber’s inclusion the IBC in the first place. With taller mass timber structures becoming more common, it’s essential that the IBC is prepared to support local officials and first responders. **Further, the support provided by the IBC must demonstrate that code officials rely upon provisions based solidly in material performance test standards and neutral evaluation.**

The 14 code proposals to ensure safety for tall mass timber buildings have been approved by the ICC’s Ad Hoc Committee on Tall Wood Buildings and ratified again at the recent ICC Committee Action Hearing where all 14 proposals were vetted and approved by relevant hearing committees.

The ICC should be commended for moving this process forward. By prompting a two-year review of the code and the science of mass timber, they have helped to ensure that local officials can apply standards that have been fully vetted by industry, government and science. This rigorous process may not sit well with certain industry groups, but the public will be safer as a result while benefiting from the clear environmental and economic advantages of mass timber buildings.

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