
2018-2019 OFFICERS

October 26, 2018

PRESIDENT**JIMMY BLAIS**Gary Merlino Construction Co.
Stoneway Concrete
SeattleTo: Our Washington Code officials
Re. ICC Tall Wood Code Development considerations**VICE PRESIDENT****JIM BURNETT**Iron Mountain Quarry
Bothell

To: Washington State ICC voting delegates;

SECRETARY/TREASURER**JAMES ESSIG**Granite Construction
Everett

The Washington Aggregates & Concrete Association is a statewide organization representing over 180 member companies in the sand and gravel, hard rock, concrete, cement and related businesses. Our members are located in all 39 counties, cities and rural communities throughout Washington.

PAST PRESIDENT**JERRY TRUDEAU**Miles Sand & Gravel
Puyallup

We are writing on behalf of our statewide membership to ask in the event you are a voting delegate in the current ICC code hearing process to VOTE NO on the tall wood code change amendments before you, specially amendment G75-18, G80-18, and G84-18.

DIRECTORS**STEVE CORLISS**Corliss Resources
Sumner

Your first impression of this request may be it is another wood vs concrete issue. For our association, it is not. We support using the best attributes of all building materials to achieve the best outcomes.

DAVID FREELSGodbey Red-E-Mix
Brewster

However, International, National and State and local building codes are based on a very simple premise; according to the Washington State Building Code Council website;

ROB JOHNSONCadman, Inc.
Redmond

“Building codes ensure structures are built and maintained to help withstand earthquakes and prevent the spread of fire, are accessible, meet life safety requirements, and are energy efficient”.

JANA MCDONALDCRH Americas Materials
Spokane

The purpose of the SB Codes is to specify minimum requirements to safeguard the health, safety and welfare of building occupants and to help reduce the risk of personal injuries, deaths and property damage. Council research is to be used by designers, engineers and contractors, and inspectors, to rely on technical performance and efficiencies and are more likely to become informed of limitations or other constraints of materials and related construction practices. Product review is an important element when Washington State council adopts statewide building codes as Washington's 39 counties and 266 incorporated cities enforce them. *However, the State Building code or any code is not a tool to promote the rural economy, create forest health, sustainability or promote one product over another.*

SCOTT NICHOLSONCalPortland
Dupont

They are a number of reasons why a push to consider the adoption of CLT construction in tall wood applications should be rejected.

ASSOCIATE DIRECTOR**JASON BREWER**BASF
Seattle

The recent failure of Peavey Hall in Oregon demonstrates a reasonable cause for concern to use an unproven product that may not be ready for use when the products inability to be protective of public safety becomes evident.

CEMENT DIRECTOR**DREW JARED**Ash Grove Cement Co.
Bellevue**ASSOCIATION STAFF****BRUCE CHATTIN**

Executive Director

In a recent article as authored by *Jeff Manning; published and aired in the Oregonian / Oregon Live Published 2:08 p.m. PT Aug. 13, 2018;*

NIKKI BLASE

Member Services Director

“The new Peavy Hall would symbolize the rebirth of the state's timber industry by showcasing its signature innovation: cross-laminated timber. With its ambitious use of wood that's been fortified to rival steel, Peavy Hall would underscore Oregon's place at the forefront of a revitalized forest products market.

STEVE BUCKNER

Millennia Public Affairs

In March, a 1,000-pound section of the third floor buckled and crashed onto the floor below. Engineers traced the panel's failure to the glue and determined at least five other panels showed signs of delamination. The closer they looked, the more bad CLT panels they found; by August, at least 85 were marked for replacement.

Peavy Hall made a statement all right: about the risks of new technologies and getting caught up in the enthusiasm of the next big thing. The months of delays, the experts and engineers, and the replacement panels will add millions to the cost of a project that already has climbed nearly 32 percent, to \$79 million, since construction began.

The Peavy problem comes after years of efforts by state officials to promote a technology they view as an economic engine for rural Oregon. The state's timber employment has fallen 62 percent since its 1980s heyday, from about 80,000 to 30,000. In 2015, the state deemed the development of cross-laminated timber buildings "essential" to the state's economic interests.

The laminated timber movement sustained another blow this summer when developers, citing construction costs, pulled the plug on the Framework building, a 12-story building planned in Portland's Pearl District. It would have been the tallest wooden tower in the country."

Cost, product performance, lack of live testing in the areas of seismic, wind, and fire are ample reasons to question moving forward on tall wood proposed code changes.

It is not our intent to take aim in what might be considered an easy criticism of CLT wood construction, but fire and the consequences of fire and response are real, and questions have not been addressed.

- Do communities that might consider tall wood structures above 6-18 stories have the equipment to fight a structural CLT fire?
- Do fire depts have the budget to invest in this equipment? A recent 2017 apartment fire in Kelowna BC revealed that very concern; a wood frame 6 story apartment under construction caught fire. The city did not have the equipment to battle the fire and the structure was left to burn itself out placing adjacent structures, property and lives at risk.

Recent experiences in the Pacific Northwest objectively suggest vulnerability in CLT elements, most specifically cost. The Portland "Framework" building encountered this very obstacle and the project has been delayed indefinitely. Clearly, additional testing and understanding of CLT needs to be conducted;

- Adhesive performance criteria have not been standardized and their ability to withstand delamination under stress, natural shrinkage or moisture intrusion during construction is not well known in live load testing.
- It is unknown what will happen to wood components after a fire sprinkler system discharge as a result of fire or accidental incident that opens a sprinkler head. The system has not been tested with the additional water load and what of the water damage and mold issues that may fester out of sight? Does this impact and undermine healthy building standards?
- The Pacific Northwest can receive 34-40 inches of rainfall per year. When exposed to rainfall during construction, how will a CLT tall wood structure handle the absorptive weight of the water, mitigate water intrusion to offset increased shrinkage and mold potential and what tests will be conducted to determine if the wood structure has been thoroughly dried out?

- As a result of construction issues of wood structures nationwide, what proactive and prescriptive measures must be put into place to insure public safety and guard against property damage of wood structures under construction? Europe requires posted security, strong insurance policies and in place charged sprinkler systems to be in place during construction. Will code recommendations require equally proactive and protective measures?
- There has been concern expressed regarding connections and how those connections will remain intact and perform when shrinkage occurs, temperature changes, or performance in seismic events.
- What are the impacts of heat, water, shrinkage and the integrity of glues and adhesives under these conditions and their ability to fully perform as intended for the future integrity of the structure?

Do we have the answers to these and other questions before code changes are adopted, in what is supposed to be the “next big thing” in construction?

Building products that have to be subsidized to be competitive indicate they are not viable products in the market place. Subsidizing building materials purposefully puts established building materials like concrete and steel at a competitive disadvantage and doesn't serve the rural economy by disenfranchising their rural businesses and undermining their ability to bid fairly on rural projects.

Heavy marketing budgets and irrational enthusiasm do not replace long term ASTM testing as required to insure building materials can safely and confidently be used in the market place for their primary intended purpose; *“to help safeguard the health, safety and welfare of building occupants to help reduce the risk of personal injuries, deaths and property damage”*.

I rely on the professional opinion of others that have expressed concerns with the proposed amendments. These opinions are very well stated in the attached statements of concern authored by the [National Association of Fire Marshals](#) and [International Association of Fire Chiefs](#). These professionals speak on behalf of fire professionals and first responders in all 50 states and their concerns, questions and opposition should be fully and strongly considered before any vote is cast to advance tall wood proposals.

We welcome the use of all building materials to achieve the best outcomes in the built environment. A focus on materials only is a limiting and narrow perspective as the greatest sustainable outcomes are obtained through effective life cycle emission reductions.

On behalf of our Washington state membership and industry, we respectfully request you or your voting delegate to vote NO on G75-18, G80-18, and G84-18.

Sincerely,



Bruce Chattin
Executive Director

cc: National Ready Mix Association;

- Lionel Lemay; PE, SE, LEED AP, CAE NRMCA Executive Vice President, Sustainable Development and Structures
- Tien Peng; LEED AP, CGP, PMP; NRMCA's Vice President, Sustainability.
- Pacific Northwest Building Resilient Coalition; William Larson; Director



NATIONAL ASSOCIATION OF STATE FIRE MARSHALS

Position Statement

Cross-Laminated Timber in the Construction of Tall Wood Buildings G75-18, G80-18, and G84-18

ISSUE: Significant changes to the ICC family of codes have been proposed to include prescriptive language for the construction tall wood buildings (TWB). The proponents of these proposals are attempting to validate, and codify, various changes to the tables regarding height, area, and stories based, in part, on “professional judgment.” This concern is exacerbated by the understanding that the historic basis for the underlying table values were themselves somewhat arbitrary. Continued consideration of the TWB concept deserves a continuation of testing, evaluation, an abundance of caution, and always a default to the side of safety.

VOTE: NASFM recommends a **Vote to Disapprove** the committee action for approval of proposals G75-18, G80-18, and G84-18 as submitted.

BACKGROUND: NASFM has submitted a public comment on tall wood buildings opposing the height and area tables. This action was taken on direction from NASFM leadership to ensure we are on the record with our concerns about the significant changes proposed by the TWB Ad Hoc Committee. While NASFM doesn’t dismiss the concept out of hand, we do feel the current proposals go too far, too fast, in an area of significant and long-lasting importance. These concerns are based on a significant amount of work by members of the NASFM Model Codes Committee, who have been involved with, and observed, the development of these proposals, participating in various meetings and TWB test burns.

In support of our opposition, consider the following aspects of the three proposals:

- There is no scientific basis for increasing height and area limits beyond what is currently allowable in code.
- There has been no live fire testing at the limits being proposed.
- There has been no "wind aided" fire testing conducted.
- There is incomplete data regarding the fire loading of test burn buildings.
- "Professional Judgement" is insufficient justification for a change of this magnitude.
- No indication that any seismic testing has been performed or evaluated which goes to the issue of resiliency and sustainability.
- To allow a proliferation of larger, taller wood buildings without proper testing and justification is premature and would impact the fire suppression environment significantly.

In the “Reason” section of each of the three proposals, the proponents state the performance objectives for TWB are:

- “No collapse under reasonable scenarios of complete burn-out of fuel without automatic sprinkler protection being considered.
- No unusually high radiation exposure from the subject building to adjoining properties to present a risk of ignition under reasonably severe fire scenarios.
- No unusual response from typical radiation exposure from adjacent properties to present a risk of ignition of the subject building under reasonably severe fire scenarios.

- No unusual fire department access issues.
- Egress systems designed to protect building occupants during the design escape time, plus a factor of safety.
- Highly reliable fire suppression systems to reduce the risk of failure during reasonably expected fire scenarios. The degree of reliability should be proportional to evacuation time (height) and the risk of collapse.”

No live fire testing has been conducted in buildings constructed to the limits being proposed, and the limited application of external influences to fire behavior. It is extremely difficult to accept that these proposals meet the committee’s own stated objectives. We are left with “professional judgment” as the only substantiation. The reason statements for these proposals places an over reliance on the presence of fire sprinklers. NASFM steadfastly supports the use of fire sprinklers, however, we are cognizant of the fact that sprinklers can never be 100% effective given the impact of human behavior on design, installation, maintenance, and intentional disabling.

NFPA *Sprinklers in Reported U.S. Fires during 2010 to 2014 Fact Sheet*, July 2017, states:

- Sprinklers operated effectively in 88% of the fires large enough to activate them.
- Reported sprinkler failures (660 per year) were twice as common as reported fires in which sprinklers were ineffective and did not control the fire.
- 40% of the combined sprinkler problems were due to system shut-offs.
- In three of every five (59%) incidents in which sprinklers failed to operate, the system had been shut off.
- In half (51%) of the fires in which sprinklers were ineffective, the water did not reach the fire.”

The term “highly reliable”, as used by the TWB committee, is subjective at best. While it is agreed that sprinklers provide a valuable life-saving service, it is speculative to base a major part of justification on this one item. Code committees, fire service organizations, and fire safety advocates have rightly demanded data to support decisions related to code changes. NASFM feels the limited testing, in conjunction with a proposed commitment to conduct additional tests, is insufficient currently to warrant changes of this magnitude.

Recommended Actions:

- Vote to disapprove (negative) the committee action on these proposals during the ICC Public Comment Hearings (PCH) October 24-31 in Richmond, Virginia.
- There are a considerable amount of submitted Public Comments that will be heard on these proposals during the Public Comment Hearings. Watch for updates to voting recommendations for use in ICC electronic voting using cdpACCESS following the hearings.

Who Are State Fire Marshals?

State Fire Marshals are the senior fire officials in the United States. State Fire Marshals' responsibilities vary from state to state, but they are primarily responsible for fire safety code adoption and enforcement, fire and arson investigation, fire incident data reporting and analysis, public education, and advising Governors and State Legislatures on fire protection policy issues. Some State Fire Marshals are responsible for fire fighter training, hazardous materials incident responses, wildland fire response and the regulation of natural gas and other pipelines.