FIRE INSIGHTS
Fire Topics Related to the Structural Building Components Industry

SBCA Policy on Fire Sprinklers

SBCA and its members strongly believe in a key engineering and building code principle of providing structural building component solutions that safeguard the public health, safety and general welfare, while serving the general public's desire to have affordable and environmentally responsible built construction. As the building code states, this also includes, "to provide safety to fire fighters and emergency responders during emergency operations."

SBCA's general policy is that, unless there is sufficient comparative data provided to show increased life-safety risk, any regulation created shall be structural element independent so that trade is not inappropriately restricted and a level competitive playing field is assured. This general policy clearly pertains to enhancing fire performance and fire safety characteristics through the application of sprinklers.

Currently, there is a general lack of comparative fire and sprinkler performance data using a scientifically based common denominator. In particular, there is absolutely no empirical data that suggests that there should be any special treatment of any type of structural product that will make the complex rigors found on the fire ground comparatively safer.

This is why we believe that if a regulation is put in place that requires the use of sprinkler systems, the sprinkler application requirements should be applied uniformly to all types of structural elements.

Furthermore, SBCA's policy with respect to sprinkler use in buildings for all types of construction and structural elements follows:

1. The impact on the affordability of construction is accounted for in the policy decision making process.
2. A cost analysis of the sprinkler regulation is completed, and it shows that the regulation as implemented, with appropriate construction technique and cost trade-offs, is affordable for both the first-cost and/or the life-cycle cost of the construction.
3. The sprinkler regulations do not put a specific type of structural element at a competitive advantage or disadvantage.
4. The sprinkler regulation shall be structural element independent as it pertains to sprinkler spacing and attachment, sprinkler head placement and depth of the head below protected and unprotected structural elements, concealed space requirements, etc.

SBCA's preference is to allow the International Residential Code (IRC) and International Building Code (IBC) language to prevail. The IRC/IBC consensus process is the proper vetting forum for debating code development, adoption and compliance requirements. Additionally it is very beneficial economically and from an accuracy of code implementation point of view to have harmony in building code regulations across all jurisdictions.

Unprotected Structural Element Testing

ASTM Comparative Test Data using 100% Design Load as the Common Denominator:

ASTM E119 Assembly Tests at Full Design Load[2]

Test	Structural Member	Spacing (inches o.c.)	Structural Failure (min:sec)	Average Deflection at Floor (inches)	Loading (psf) - Percent Design Stress
FM FC 209	2x10	24	13:34	2.83	62.1 - 100%
FM FC 212	2x10	24	12:06	3.58	62.4 - 100%
NBS 421346 (2)	2x10	16	11:38	2.7	63.7 - 100%
NBS 421346 (4)	2x10	16	11:38	3.3	63.7 - 100%
FPL	2x10	16	6:30	4.0	79.2* - 100%
FM FC	12" Truss**	24	10:12	11.5	60.0 - 100%
FM FC 208	7¼ Steel C-joist	24	7:30	7.0	69.8 - 100%

*This load may be greater than 100% of design load. **Refers to a Metal Plate Connected Wood Truss.

Additional Performance Concepts:

Trusses perform in a manner similar to other structural elements during the siege of fire. All typical unprotected structural framing elements will generally collapse in less than 15 minutes under identical fire conditions.

No buildings are designed specifically to resist fire loading conditions and no two fires are identical.

We believe that buildings under the siege of fire are the firefighter's enemy and can certainly lead to death. We believe that emphasizing the extreme need for firefighter training for ALL building types and ALL structural framing materials is very important.

Finally, we feel that the following activities will reduce the risk of loss of life on the fire ground:

- Conducting thorough, pre-incident evaluation of all structures.
- Using only proper safety precautions when venting the roof.
- Opening concealed spaces quickly to determine current fire location.
- Being aware of the time factor by always asking, both prior to arrival and while on the fire-ground, "How long has the fire been burning?"
- Communicating all abnormalities to fire ground command.
- Watching for indications of structural deterioration.
- Broadly disseminating new tactical safety concepts learned from each fire.

The loss of one firefighter is one too many. Education and training may be the single most important collective activity the fire service and structural component industry can undertake to enhance protection of life at the scene of a fire.

Additional Resources:

- For more information on how structural building components react in a fire situation, go to **www.carbeck.com**
- For more information on our comprehensive online educational program, go to **http://www.ttw.sbcindustry.com** to view all of our Component Technology Workshops.
- For more information on SBCA professional membership, go to **http://www.sbcindustry.com/enhancedmem.php.**