



Earthquake Brace Connections to Structural Members

A recent EOD question from an NFSA member has revealed a limitation not clearly addressed in NFPA 13, and an error introduced into the 2007 edition of the standard. The member contractor had been asked to move seismic bracing from the top chord of an open web joist to the bottom chord. He noted that it had been common practice in their office not to brace to the bottom chord, but couldn't find any rule in the sprinkler standard that would prohibit this practice.

While there are no clear and direct rules, guidance in this area is found in Figure 9.3.5.9.1 of NFPA 13 (2007 edition). The answer to whether you can attach to the bottom of a beam, or the bottom chord of a truss or joist, depends on the orientation of the brace to the structural member. In Figure 9.3.5.9.1, there are three sets of fastener orientations. In the first and third set, the load is parallel to the run of the structural member, while in the middle set (identified as conditions D, E, and F) the load is perpendicular to the structural member. For those fasteners arrangements, the figure intends to show the fasteners located in the top half of the structural member, with the notation of the distance below the fastener being "minimum 1/2 depth of beam." The reason is to avoid overturning moment on the structural member.

Unfortunately, when the figures were re-drawn for the 2007 edition, the artist located the "fastener" within the lower half of those illustrations, confusing the issue. Another error introduced into the drawings for the 2007 edition was the subtitle "Load Perpendicular to Structural Member" under the illustrations for conditions A, B, and C as well as conditions D, E, and F. As noted above, the load is actually parallel to the structural member for conditions A, B, and C. A load perpendicular to the structural member would not normally be allowed for those conditions due to the concern for overturning moment. In addition, a narrow structural member might not have enough resistance to a perpendicular load.

So, while earthquake braces can be fastened to the lower face or chord of structural members, this should only normally be allowed where the applied loads are parallel to the run of the structural members. Other arrangements would require structural analysis.

Truncation of NFPA 25 Table 5.5.1

On the subject of errors that have not been officially found and publicized by the NFPA, one was caught at a recent meeting of the NFPA Committee on Inspection, Testing and Maintenance of Water-Based Fire Protection Systems. During committee deliberations, it was discovered that Table 5.5.1 exists in two different versions in the 2008 edition of NFPA 25. In both written and electronic editions, some versions end with the row addressing "Testing and Maintenance Components", while others continue with two more sections as follows:

Structural Components

Hanger/seismic bracing	X	X	X	Check for conformance with NFPA 13	
Pipe stands		X	X	X	Check for conformance with NFPA 13

Informational Components

Identification signs	X X X	Check for conformance with NFPA 13
Hydraulic placards	X X X	Check for conformance with NFPA 13

It appears that the omission was inadvertent and corrected in later print runs, but there were no errata issued on this subject.

Upcoming "Technical Tuesday" Online Seminar – October 27th

Topic: *Inspection and Testing of Hose Systems and Hose Connections*

Instructor: *Kevin J. Kelly, P.E., NFSA Consultant*

Date: *October 27, 2009*

This seminar will cover inspection and testing requirements for hose systems and hose connections installed on sprinkler systems in accordance with NFPA 13 and standpipe systems in accordance with NFPA 14. Participants will be able to determine how to properly perform a standpipe flow test and will understand reporting procedures including recording data, evaluating results, and information necessary for final reports. (Great study guide for NICET Work Elements 43011 and 45003)

Upcoming "Business Thursday" Online Seminar – November 5th

Topic: *Inspection Contracts*

Instructor: *Michael J. Friedman, P.E., NFSA Consultant*

Date: *November 5, 2009*

Note: This is a change from the originally-scheduled date of October 29, 2009. The change was made to accommodate the International Residential Code hearings in Baltimore taking place on October 28-29, 2009.

This seminar focuses on Inspection Contract language and Form of Agreements. Large dollar settlements and court decisions may depend on the language that is used in an agreement between an owner and an inspecting contractor. For certain, there is concern on the part of the inspecting company as to what kind and how much liability will be incurred should a loss occur after inspections take place. The seminar will include examination of a model agreement and include a few case studies and suggested language for identifying deficiencies.

In-Class Training Seminars

NFPA 13 Overview	Pembroke, MA	Oct 27-28
Plan Review Policies & Procedures	Pembroke, MA	Oct 29
Inspection, Testing & Maintenance	Irving, TX	Oct 27
Hydraulics for Fire Protection	Irving, TX	Oct 28
NFPA 13, 13R, 13D 2007 Update	Irving, TX	Oct 29
NFPA 13, 13R, 13D 2007 Update	Effingham, IL	Nov 10
Plan Review Policies & Procedures	Effingham, IL	Nov 11
Hydraulics for Fire Protection	Effingham, IL	Nov 12
NFPA 13, 13R, 13D 2007 Update	Des Moines, IA	Dec 1
Hydraulics for Fire Protection	Des Moines, IA	Dec 2
Sprinkler Protection for General Storage	Des Moines, IA	Dec 3
Sprinkler Protection for Rack Storage	Marana, AZ	Dec 8
Sprinkler Protection for General Storage	Marana, AZ	Dec 9
Basic Seismic Protection (1/2 Day)	Marana, AZ	Dec 10
Advanced Seismic Protection (1/2 Day)	Marana, AZ	Dec 10

These seminars qualify for continuing education as required by NICET.

To register or for more information, contact Dawn Fitzmaurice at (845) 878-4207 or send an e-mail to seminars@nfsa.org

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About the National Fire Sprinkler Association

Established in 1905, the National Fire Sprinkler Association (NFSA) is the voice of the fire sprinkler industry. NFSA leads the drive to get life-saving and property protecting fire sprinklers into all buildings; provides support and resources for its members – fire sprinkler contractors, manufacturers and suppliers; and educates authorities having jurisdiction on fire protection issues. Headquartered in Patterson, N.Y., NFSA has regional operations offices throughout the country. www.nfsa.org.

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