



National Fire Protection Association

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MEMORANDUM

TO: NFPA Technical Committee on Hanging and Bracing of Water-Based Fire Protection Systems

FROM: Elena Carroll, Administrator, Technical Projects

DATE: November 9, 2011

SUBJECT: NFPA 13 ROC **TC FINAL** Ballot Results (A2012)

The Final Results of the NFPA 13 ROC Letter Ballot are as follows:

29 **Members Eligible to Vote**
2 **Not Returned** (Bonds and Laguna)
21 **Affirmative on All**
6 **Negatives** (Deneff, Deutsch, Kirschner, Schwab, Thacker, and Wellen) (on one or more comments as noted in the attached report)
0 **Abstentions**

There are two criteria necessary to pass ballot [(1) affirmative $\frac{2}{3}$ vote and (2) simple majority].

- (1) The number of affirmative votes needed for the comment to pass is **18**.
(29 eligible to vote – 2 not returned - 0 abstentions = $27 \times 0.66 = 17.82$)
- (2) In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required. This is the calculation for simple majority:

$$[29 \text{ eligible} \div 2 = 14.5 = \mathbf{(15)}]$$

Reasons for negative votes, etc. from alternate members are not included unless the ballot from the principal member was not received.

According to the final ballot results, all ballot items received the necessary $\frac{2}{3}$ required affirmative votes to pass ballot.

Document # 13

13-37 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

3.5 Various Definitions, 9.3.3, and A.9.3.3 (New) (Log # 106)

Not Returned

Bonds, R.

Laguna, A.

Affirmative with Comment

Valentine, V. I agree with the position, but the Committee Statement should reference the action taken by comment #13-43 (Log #CC33).

13-38 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

3.5.9 Risers, 3.5.x Branch Line Riser (New), and 9.3.2.3(2)(b) (Log # 79)

Not Returned

Bonds, R.

Laguna, A.

13-43 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

3.11.x (Log # CC33)

Not Returned

Bonds, R.

Laguna, A.

13-44 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

3.11.1 Hanger (Log # 54)

Not Returned

Bonds, R.

Laguna, A.

13-45 Eligible To Vote:29 Affirmative: 26 Negative: 1 Abstain: 0 Not Returned: 2

3.11.3 (Log # 335)

Not Returned

Bonds, R.

Laguna, A.

Negative

Deneff, C. The verbiage improves the verbiage in Proposal 13-53 that was accepted in the ROP phase, but am voting negative since I don't think the definition is correct. Looking at Section 9.3.5.7, we don't ask for anything to resist the vertical brace force component when the horizontal force is less than 0.5Wp with braces at 45 degrees or less than 1.0Wp with braces at 60 degrees. This implies that we are subtracting a value of 0.5Wp from the vertical uplift at the brace to get the "net". The definition doesn't reflect this.

Document # 13

13-46 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2**3.11.5** (Log # 350)

Not Returned**Bonds, R.****Laguna, A.**

13-92 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2**7.2.3.9.1** (Log # CC31)

Not Returned**Bonds, R.****Laguna, A.**

13-229 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2**9.1.1.2(6), 9.3.5.1.4, 9.3.5.1.5, A.9.1.1.2(6), A.9.3.5.1.4, and A.9.3.5.1.5** (Log # 319)

Not Returned**Bonds, R.****Laguna, A.**

13-230 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2**Table 9.1.1.6.1(a)** (Log # 351)

Not Returned**Bonds, R.****Laguna, A.**

Affirmative with Comment

Deneff, C. The tables are given in 0.5 ft increments up to 16 ft. The current table only provides at 1 ft increments (except that 1.5 ft and 2.5 ft are also included). Providing 0.5 ft increments seems like it expands the tables unnecessarily.

Valentine, V. I agree with the position, but there is a typo in the first sentence of the statement, it should end with "...single continuous members."

13-231 Eligible To Vote:29 Affirmative: 26 Negative: 1 Abstain: 0 Not Returned: 2**9.1.1.6.7 and 9.1.1.6.8** (Log # 48)

Not Returned**Bonds, R.****Laguna, A.**

Negative

Wellen, T. The committee statement is still flawed as this is not common practice and it doesn't make any sense. If the committee is going to allow for slots in structural members when supported by all thread rods for convenience purposes, then it should be allowed for bolts and other fasteners referenced in the standard.

13-232 Eligible To Vote:29 Affirmative: 26 Negative: 1 Abstain: 0 Not Returned: 2

9.1.1.6.7 and 9.1.1.6.8 (Log # 53)

Not Returned

Bonds, R.

Laguna, A.

Negative

Wellen, T. Mr. Kirschner's comment is correct that bolting is a method of attachment accomplished by fasteners commonly known as bolt, stud, MSR and ATR etc. The wording should have been changed to reflect as such to address other types of fasteners connecting to structural members.

13-233 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

9.2.3.2.1 (Log # 352)

Not Returned

Bonds, R.

Laguna, A.

13-234 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

9.2.4.1 (Log # 49)

Not Returned

Bonds, R.

Laguna, A.

13-235 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

9.2.4.1 (Log # 55)

Not Returned

Bonds, R.

Laguna, A.

13-236 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

9.3.4.9 and 9.3.4.9.1 (New) (Log # 223)

Not Returned

Bonds, R.

Laguna, A.

13-237 Eligible To Vote:29 Affirmative: 26 Negative: 1 Abstain: 0 Not Returned: 2

9.3.5.2.2 (Log # 1)

Not Returned

Bonds, R.

Document # 13

Laguna, A.**Negative**

Kirschner, K. Certain sway brace fittings may not have been tested for listing typical to their installation. I thought the standard was an appropriate place to address this oversight.

13-238 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2**Table 9.3.5.3.2(d)** (Log # 135)

Not Returned**Bonds, R.****Laguna, A.**

13-239 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2**9.3.5.3.6** (Log # 56)

Not Returned**Bonds, R.****Laguna, A.**

13-240 Eligible To Vote:29 Affirmative: 26 Negative: 1 Abstain: 0 Not Returned: 2**9.3.5.3.9** (Log # 109)

Not Returned**Bonds, R.****Laguna, A.****Negative**

Kirschner, K. There are too many variables to guarantee a reliable dampening effect of a 6" single rod hanger. The exception for this hanger breaks the continuity of all the sway brace tenets of 9.3.5.3 and introduces inconsistency by ignoring its conservative engineering philosophy. The sway brace exception granted to this hanger is too inclusive, not limited and therefore arbitrary in nature. Variations of seismic force, system configuration, pipe type and pipe size all have compounding effects which limit the ability of a sway brace... BUT NOT A HANGER? Until the T.C. can produce substantial positive data, it is not prudent to exclude the requirements of 9.3.5.3.

Please acknowledge the T.C. substantiation for proposal 13-241 "The requirements of section 9.3.5.1.1 CAN NOT BE MET by allowing the omission of sway bracing in lieu of short rods. "

Conflict with 9.3.5.3 - MUST SWAY BRACE to control effects of Fpw on system piping.

Conflict with 9.3.5.6 - MUST COMPUTE Fpw per SEI/ASCE 7 and Chapter 9.

Chapter 9 was tasked to align with SEI/ASCE 7 for the 2007 edition of NFPA 13. This revision was NOT BASED on loss history. Therefore, the absence of lost history to justify keeping 9.3.5.3.9 or 9.3.5.3.10 is irrelevant to the SEI/ASCE 7 analogy. Chapter 9 conformity was achieved to placate the I-Codes and improve its engineer principles. Accordingly, 13-240 conforms to SEI/ASCE7 analogy.

Affirmative with Comment

Document # 13

Deutsch, J. The sections should not be eliminated but as currently written these sections allow unlimited seismic loads and they should be modified to have some limitation of seismic load.

13-241 Eligible To Vote:29 Affirmative: 24 Negative: 3 Abstain: 0 Not Returned: 2
9.3.5.3.9 and A.9.3.5.9 (New) (Log # 77)

Not Returned**Bonds, R.****Laguna, A.****Negative**

Kirschner, K. This proposal highlights several of the many inconsistencies inherent in 9.3.5.3.9. Since NFPA 13 is an emergency system, I submit that this proposal should be subordinate to comment 13-240.

The problem addressed by this proposal is identical to that in 13-240 and 13-242.

Should we continue to ignore the SEI/ASCE 7 analogy, but choose to limit this application, I propose limiting 13-241 to lines ONLY and ONLY 3" maximum pipe size. - Note: 4" hanger load is 50 percent higher than 3" hanger load.

WE MUST sway brace feed mains and bulk mains as these pipes are too important to system performance, without even quantifying variations in Cp.

Schwab, P. The ability to use the 6" rods on cross mains has been acceptable for many cycles. The submitter did not provide any instances of failure associated with this issue.

Thacker, J. Documentation and or evidence of there being a problem with the current language in section 9.3.5.3.9 was not provided. There has not been evidence of present text language being adequate.

Affirmative with Comment

Deneff, C. I believe the short hanger exception on other piping systems has historically been applied to single pipes, so disallowing the 6" hanger exception for cross mains is definitely justified since this is a system of pipes and there is no upper limit on the lateral force. I don't think this change goes far enough, however. A very large feed main still generates substantial lateral force and there are no requirements for making sure the hanger and its attachments are adequate for this force. The consequences of loss of feed main vertical support are catastrophic. FM Global allows the short hanger exception only on 3.5" and smaller branch lines. The lateral force from these single branch lines is relatively small and the consequences of a branch line break, while not desirable, are much less severe than a main break. NFPA should consider disallowing the short hanger exception on all piping except small branch lines.

13-242 Eligible To Vote:29 Affirmative: 26 Negative: 1 Abstain: 0 Not Returned: 2
9.3.5.3.10 (Log # 108)

Not Returned**Bonds, R.****Laguna, A.****Negative**

Document # 13

Kirschner, K. This hanger provides no dampening effect and the additional seismic load will compromise it or overwhelm it. Because this U-hook has some features similar to a sway brace, this should not justify the omission of a sway brace per the requirements of 9.3.5.3. Promoting a hanger of questionable ability as an acceptable alternative to a sway brace of known ability is not conservative engineering. We should eliminate 9.3.5.3.10 to remedy this inconsistency in Chapter 9.

This hanger is equally deficient per 9.3.5.1.1, 9.3.5.3 and 9.3.5.6 with slight variations.

The engineering arguments of style here are also similar to proposal 13-240. - Please see 13-240.

13-243 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

9.3.5.5.1 (Log # 204)

Not Returned

Bonds, R.

Laguna, A.

13-244 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

9.3.5.6.4 and 9.3.5.6.4.1 (Log # 71)

Not Returned

Bonds, R.

Laguna, A.

Affirmative with Comment

Deneff, C. In the verbiage of 9.3.5.6.4.1, the line that says "...yield strength or the riser nipple..." should I think be "...yield strength of the riser nipple...". Also for the definition of Hr, "RN" should be replaced by the words "riser nipple".

Valentine, V. I agree with the position, but Hr should be defined as "length of riser nipple piping (inches)." Although RN is commonly used in the field it is not a defined abbreviation in NFPA 13.

13-245 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

9.3.6.3 (Log # 146)

Not Returned

Bonds, R.

Laguna, A.

13-246 Eligible To Vote:29 Affirmative: 24 Negative: 3 Abstain: 0 Not Returned: 2

9.3.7.8 and A.9.1.3 (Log # 336)

Not Returned

Bonds, R.

Laguna, A.

Negative

Document # 13

Deutsch, J. During debate of this proposal it was brought up that in some situations this will require the use of type and or size of an anchor that does not exist. While there are listed anchors available there are not ACI 355.2 pre-qualified anchors available. This proposal should be modified to make allowance for this situation.

Schwab, P. By accepting this proposal, this committee has made it impractical to hang sprinkler piping in certain types of concrete construction. There are only a limited amount of fasteners that are listed and are pre-qualified. This requirement should not be in this standard until there are options for all types of currently used concrete construction.

Thacker, J. We should not be requiring the use of an anchor that does not exist. There are certain types of construction (hollow core concrete as example) which are not compatible with anchors which require an embedment greater than 1". As of the time of the ROC meeting there are not any ACI 355.2 pre-qualifies anchors known for this these types of application. John Silva of Hilti stated that Hillti does have listed shallow anchors requiring only 1" of embedment but that Hilti is not contemplating submittal of the shallow anchors to meet the pre-qualification requirements of ACI 355.2.

Affirmative with Comment

Wellen, T. After the presentation from the manufacturer's representative that concrete anchors used to secure hangers to the building structure shall be in accordance with ACI 355.2, this would apply to all concrete anchors supporting a suspended load, regardless whether or not it's seismic design.

13-247 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

9.3.11 (Log # 113)

Not Returned

Bonds, R.

Laguna, A.

13-358 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

A.9.1.1.7 (Log # 250)

Not Returned

Bonds, R.

Laguna, A.

13-359 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

A.9.1.2.3 (Log # CC34)

Not Returned

Bonds, R.

Laguna, A.

13-360 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

A.9.2.6 (Log # CC32)

Not Returned

Bonds, R.

Laguna, A.

13-361 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

A.9.3.2.3(2)(b) (Log # CC30)

Not Returned

Bonds, R.

Laguna, A.

13-362 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

A.9.3.2.4 (Log # 73)

Not Returned

Bonds, R.

Laguna, A.

Affirmative with Comment

Deneff, C. The definition for S1 says "...per USGS 2010 Seismic Design Maps (see ASCE 7-10)." The dates of the references should not be used, that is, change to "...per USGS Seismic Design Maps (see ASCE 7)."

13-363 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

A.9.3.4 (Log # CC35)

Not Returned

Bonds, R.

Laguna, A.

13-364 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

A.9.3.5 (Log # 52)

Not Returned

Bonds, R.

Laguna, A.

13-365 Eligible To Vote:29 Affirmative: 27 Negative: 0 Abstain: 0 Not Returned: 2

Figure A.9.3.5(a) and (b) (Log # 353)

Not Returned

Bonds, R.

Laguna, A.
