

Goyette, Joanne

To: Goyette, Joanne
Cc: Klaus, Matthew; Bielen, Rich; Walker, Nancy; Baio, Debbie; Bock, Jackie
Subject: Additional Circulation Explanations for NFPA 13 A12 (AUT-HBS) ROP Final Ballot Results
Attachments: Additional Responses for Kraig Kirschner HBS ROP Ballot.pdf

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

Dear Committee Members:

Attached please find the following additional ballot votes from Mr. Kraig Kirschner, which were inadvertently omitted from the Final Circulation Explanations Report in the NFPA 13 A12 (AUT-HBS) ROP Final Ballot Results.

Mr. Kirschner's comments do not change any ballot results.

The NFPA 13 (AUT-HBS) ROP Final Ballot Results have also been posted to the NFPA 13 Document Information page. You can locate the file on the Next Edition Tab at the following link: <http://www.nfpa.org/13>.

Regards,

Joanne Goyette

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The United State Fire Administration (USFA) and National Fire Protection Association (NFPA) are working together to remind everyone that home fires are more prevalent in winter than in any other season. Learn how to reduce your risk of experiencing a fire this winter.



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Proposal No.13-312 Log #104 **Affirmative With Comment**

NFPA 13 is the standard for an emergency- must dominate AISC.
Can not ignore 5wt. +250#...it is a conservative simplifying assumption.
Ch. 9 of NFPA 13 is the reference for listing by UL for 203 and 203A.

Proposal No.13-315 Log #547 **Affirmative With Comment**

Too many variables for the Ch. 9 trapeze protocol.
Must certify by Engineer of Record on a case by case basis.

Proposal No.13-316 Log #549 **Affirmative With Comment**

Ch. 9 is clear on this.
Use hanger criteria at 5 wt. + 250#.

Proposal No.13-330 Log #523 **Affirmative With Comment**

Ch. 9 is clear regarding both pipe stands and brackets...5 wt. + 250#
Pipe stand and bracket should both have a load rating.

Proposal No.13-331 Log #548 **Affirmative With Comment**

NFPA 15 should reference NFPA 13.

Proposal No.13-332 Log #111 **Affirmative With Comment**

This proposal is confusing hanger support criteria with bldg. support criteria

Proposal No.13-337 Log #442 **Negative**

Existing text at 9.3.4.9 is sufficient and concise. In the practical construction environment, sprinkler pipe is installed through holes in structural elements that are oversized. When this hole provides support, clearance exists at the other 3 coordinates i.e. top - side - side, which shall conform to 9.3.4.9.

Proposal No.13-347 Log #132 **Negative**

Fire Sprinklers are an emergency system with an importance factor of 1.5.
Therefore, when we even allow hangers in lieu of sway braces, which is intellectually inconsistent, the ability of their fasteners should meet seismic fastener criteria of this standard.

Proposal No.13-360 Log #511

Negative

Fire sprinkler are an emergency system with an importance factor of 1.5. Therefore, in a seismic area hanger fasteners are just as important as sway brace fasteners.

Proposal No.13-556 Log #522

Negative

Oversized holes in these ceilings should not be a requirement of NFPA 13 because there is not sufficient loss experience to support a problem thesis. I don't agree with burdening contractors with oversized trim rings and annular space requirements when they are not necessary.

The proposal and the committee action is inserting corrective language text in the wrong section of the standard. The Chapter 9 T.C. created the T-Bar exceptions at 9.2.1.3.3 which is the best place to modify and insert the following proposed text;

9.2.1.3.3.2 When installed and supported by suspended ceilings, the ceiling shall meet ASTM C635, *Standard Specifications for the Manufacturer, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings*, and shall be installed in accordance with ASTM C636, *Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels*, and in seismic areas these ceilings shall be braced per ASTM E580, *Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels in Areas Subject to Earthquake Ground Motions.*



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MEMORANDUM

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

FROM: Joanne Goyette

DATE: March 25, 2011

SUBJECT: NFPA 13 (AUT-HBS) ROP TC **FINAL** Ballot Results (A2012)

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

28 Members Eligible to Vote
2 Not Returned (R. Bonds and A. Laguna)
17 Affirmative on All
9 Negatives (R. Bachman, C. Deneff, J. Deutsch, J. Gillengerten, K. Kirschner, J. Patel, J. Tauby, J. Thacker, and V. Valentine) (on one or more proposals 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 proposal to pass is **18**.
 $28 \text{ eligible to vote} - 2 \text{ not returned} - 0 \text{ abstentions} = 26 \times 0.66 = 17.16$
- (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:
 $[28 \text{ eligible} \div 2 = 14 + 1 = \mathbf{(15)}]$

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.

13-52 3.11.3 and A.3.11.3 (Log # CP101)

Affirmative with Comment

Kirschner, K. The word COMBINATION is problematic. Therefore suggest A.3.11.3 A sway brace assembly could include adjacent lateral and longitudinal braces.

13-312 9.1.1.2 (Log # 104)

Negative

Patel, J. The proposal provides two distinct sizing methods for hanger components i.e. proper allowable yield stresses when 'w+250' (normal) load or '5w+250' (testing) loads are applied. Other Piping Codes (ANSI B31.1 & 31.3) provide allowable stresses for various loading conditions.

Affirmative with Comment

Bachman, R. I am sympathetic with the proposer and hope he brings a revised proposal to the meeting in September.

13-314 9.1.1.4.1 (Log # 105)

Negative

Patel, J. See my Explanation of Negative on Proposal 13-312 (Log #104).

Affirmative with Comment

Bachman, R. See my Comment on Affirmative on Proposal 13-312 (Log #104).

13-317 9.1.1.6.1 (Log # 106)

Negative

Patel, J. See my Explanation of Negative on Proposal 13-312 (Log #104).

13-318 Table 9.1.1.6.1(b) (Log # 17)

Affirmative with Comment

Bachman, R. I am sympathetic with the proposer and believe we should provide some guidance in NFPA-13 on this subject.

13-320 9.1.1.6.5 (Log # 107)

Negative

Patel, J. See my Explanation of Negative on Proposal 13-312 (Log #104).

Affirmative with Comment

Bachman, R. See my Comment on Affirmative on Proposal 13-312 (Log #104).

13-321 9.1.1.6.6 (Log # 108)

Negative

Patel, J. See my Explanation of Negative on Proposal 13-312 (Log #104).

13-324 9.1.2.2 (Log # 109)

Negative

Patel, J. See my Explanation of Negative on Proposal 13-312 (Log #104).

Affirmative with Comment

Bachman, R. See my Comment on Affirmative on Proposal 13-312 (Log #104).

13-326 9.2.3.2 (Log # 257)

Affirmative with Comment

Deneff, C. I agree with the concept, but the verbiage supplied is confusing when it is inserted into the document. Suggest simply adding a sentence to current Section 9.2.3.2.1, something to the effect of: "A continuous length of pipe with welded or mechanical outlets is considered to be a single section."

13-327 9.2.3.2.1.1 and A.9.2.3.2.1.1 (Log # 160)

Negative

Deneff, C. This seems like it would allow a "U" shaped offset with dimensions of each leg to be 5 ft. An offset of this magnitude should probably have a hanger on the outstanding leg to support the "U" assembly. If the changes are made, Section 9.2.3.2.1 and 9.2.4.1 need to be modified to include the added sections.

13-329 9.2.4 (Log # 258)

Negative

Deneff, C. I believe there should be a hanger on mains between each branch line as is currently the case per 9.2.4.1. This change could allow multiple branch lines without an adjacent hanger. Also, the change seems to make what is being asked for confusing. 9.2.4.1 says "...between each branch line, or on each section of pipe, whichever is the lesser dimension." So even for longer sections, the previous requirement still would have specified a hanger between each branch line. The new section contradicts this. Which should be applied?

13-330 9.2.6 (Log # 523)

Negative

Valentine, V. This Committee is the one that holds the expertise on supporting water-based piping systems for fire protection. Although pipe stand use is minimal with NFPA 13 systems, they are still used. In addition, the information in NFPA 13 is referenced by many other water-based fire protection systems, some of which more regularly rely on pipe stands. Where the standard does not provide specific guidance it will be sought from other locations, such as the requirements in NFPA 15. This Committee should review that information to see if it is appropriate and considers all of the necessary components. One example that needs to be addressed is NFPA 15 referencing NFPA 13 for earthquake protection, but there is no mention of even the considerations necessary for a pipe stand when in an earthquake area. Pipe stands need to be reviewed.

Affirmative with Comment

Deutsch, J. The original proposal stated that "Actual text for the section has not been included..." and "Information should be available by the time of the ROP meeting..." Nothing was presented at the ROP meeting to the committee for review.

13-337 9.3.4.10 (Log # 442)

Negative

Deneff, C. I am persuaded by J. Deutsch's comments from the initial circulation of the ballot. I think there is some merit to the proposal, but I do agree that the provision could be misinterpreted and allow situations where no clearance is provided around certain pipes that should have it. Perhaps the proposed language could be changed such that it says that clearance is not required at the bottom (where the pipe is supported) but is required around the rest of the pipe circumference, because, obviously if the pipe is supported on a member there is by definition no clearance.

Deutsch, J. With respect to section 9.3.4 and the existing 9 sub sections it seems clear that sprinkler pipe is not intended to be up tight to something substantially solid or strong such that it could break the pipe in a seismic event. Section 9.3.4.5 allows for an omission of clearance but only when flexible couplings are on either side of the penetration. These couplings are to let the pipe which is held tight in the penetration move without breaking. It appears that this proposal would not require flexible couplings on either side of a penetration. By accepting this proposal, every penetration would not need clearance or couplings, every penetration would simply be considered to be providing support. An example would be pipe tight below composite wood joist which has to penetrate through a hole in a GLB or WF beam. Currently the penetration would need clearance or couplings but if this proposal is accepted then the hole would only need to be large enough for the pipe, the hangers on either side of the penetration would be eliminated as the penetration would be used for support. It is not good practice to eliminate clearance, couplings and hangers just to reduce the size of a penetration. If this is accepted, then every penetration will simply be considered to be providing support and clearance, couplings and hangers will not be provided. As written this proposal would be applicable to any penetration in a structural member and while this proposal may be appropriate in some situations like a parking garage, it is not appropriate for all situations.

Thacker, J. Section 9.3.4.1 requires clearance between pipe and structural elements. Section 9.3.4.5 is an exception to be used when clearance is not provided and requires flexible couplings to be utilized when clearance is not provided. This new proposal as written does not require couplings if the penetration is used for support.

Affirmative with Comment

Bachman, R. I am in agreement with the proposed change. However, I am requested an additional change to Section 9.3.4. I request that the following additional sentence be added to subsection 9.3.4.10 or be added as new subsection 9.3.4.11 that reads "A clearance of at least 2 in (50 mm) in all directions shall be provided between structural members and hard piped sprinkler risers, drops and heads". As I discussed with the hanging and bracing committee at our February meeting, interaction between these items is a major source of failure during earthquakes. I believe this may already be required by Section 9.3.4.9 but is not clear. This addition will make the clearance requirement abundantly clear.

Gillengerten, J. I support Bachmans' recommendation that additional clarification is needed regarding the required clearance around hard piped sprinkler risers, drops, and heads. I request that the following additional sentence be added to subsection 9.3.4.10 or be added as new subsection 9.3.4.11 that reads "A clearance of at least 2 in (50 mm) in all directions shall be provided between structural members and hard piped sprinkler risers, drops and heads".

13-338 9.3.5 (Log # CP102)

Affirmative with Comment

Deneff, C. In some cases, listed capacity of braces may already have been resolved to horizontal, in which case 9.3.5.2.3 would not need to be applied. Suggest changing that verbiage to "9.3.5.2.3 Where listed loads have not been resolved to horizontal, the listed load along the brace shall be reduced as shown in Table 9.3.5.2.3 for installations where the brace is less than 90 degrees from vertical."

Harper, J. The Committee needs to consider eliminating CPVC pipe from being permitted for use as sway bracing. Documentation presented at the ROP meeting showed that working stress of CPVC is 2,000 psi @ 73F, and @ 140 F, the working stress of CPVC is reduced 50% to 1,000 psi. Should a fire occur after an initial seismic event, it is entirely likely that CPVC sway bracing will be exposed to compartment temperatures in excess of 140 F even if sprinklers operate, thus jeopardizing the capability of the CPVC pipe to function as a sway brace in aftershock events.

13-339 9.3.5.1.4 (New) (Log # 67)

Negative

Deneff, C. I agree with J. Tauby's comments from the initial circulation of the ballot. There is some merit to the proposal, but even drain lines should have some restraint in order to prevent them from falling or affecting the other portions of the system. In reality, wouldn't drain lines be relatively small diameter pipe anyway and not need much in the way of bracing? Perhaps the bracing could be less (e.g., use provisions for branch line restraint). If drain lines are 2.5" or larger it seems like bracing should not be omitted.

Tauby, J. The drain pipe needs to be braced as per ASCE 7-10 section 13.6.8. Just because the drain pipe is not a critical component of the system, does not mean it should not be braced. The building code requires pipe bracing, not based on critical usage, but on safety. One of the purposes of pipe bracing is to protect humans in the building from falling pipes during/after the earthquake. Section 13.6.8 of ASCE 7-10 does not exempt drain lines from bracing. All exceptions are based on the size of the pipe and which Seismic Design Category applies to the structure. By exempting drain lines, we would be in violation of the building code.

13-340 9.3.5.2 (Log # 131)

Negative

Kirschner, K. TESTED FOR LISTING AT MAXIMUM ECCENTRICITY will provide a uniform basis of comparison.

This is not specific listing criteria, as a products ability will vary unique to their design.

It is important for the standard to include wording that reduces misapplication.

Sway bracing is dynamic in practice, including many variables. This proposal documented many inconsistencies in product engineering sheets. The committee should discuss revised wording to address this documented problem.

Affirmative with Comment

Deneff, C. Manufactured brace components typically have some eccentricity. Technically, they might be considered to violate Section 9.3.5.8.4 "All parts and fittings of a brace shall lie in a straight line to avoid eccentric loadings on fittings and fasteners." Also, Annex material A.9.3.5.9.1 goes into great detail about prying action (caused by eccentricities). I think there is some value in incorporating different language into 9.3.5.8.4 to account for eccentricities. Something like: "All parts and fittings of a brace shall lie in a straight line to avoid eccentric loadings on fittings and fasteners unless the effects of the eccentric loadings have been accounted for by calculations or in determining the listed load capacity."

13-341 9.3.5.2.5 (Log # 514)

Negative

Deneff, C. The proposed committee wording is confusing. At a change in direction, the lateral braces brace perpendicular directions on the two connected pipes. Using this measurement does not seem to make sense. I would suggest using the wording given by the submitter. It parallels other requirements in the code: 9.3.5.11.3 Pipe runs less than 12 ft (3.7 m) in length shall be permitted to be supported by the braces on adjacent runs of pipe.

13-342 9.3.5.3.1 (Log # 443)

Negative

Deneff, C. See comments on Proposal 13-339 (Log 67). A pipe that is more than 2.5" should be braced in my opinion.

Tauby, J. See my Explanation of Negative on Proposal 13-339 (Log #67).

Affirmative with Comment

Bachman, R. I am in agreement with the proposed change. However, I am requesting an additional change to Section 9.3.5.1. I request that the following additional sentence be added to the end of subsection 9.3.4.10 that reads "However, all branch lines are required to be laterally restrained in accordance with Section 9.3.6.4 regardless of diameter". As I discussed with the hanging and bracing committee at our February meeting, I believe this is already required by Section 9.3.6.4 however I am finding that sprinkler system installers are interpreting Section 9.5.3.1 to mean that lateral restraints are not required for branch lines less than 2¹/₂ inches in diameter. This addition will make the lateral restraint requirement abundantly clear.

Gillengerten, J. I support Bachmans' recommendation that branch lines be braced. I request that the following additional sentence be added to the end of subsection 9.3.4.10 that reads "However, all branch lines are required to be laterally restrained in accordance with Section 9.3.6.4 regardless of diameter".

Valentine, V. The Committee statement is tied to 13-339 (Log #67).

13-344 Table 9.3.5.3.2(d) and (e) (Log # 113)

Negative

Bachman, R. The table emailed to us by NFPA-13 staff after the meeting provided adequate and sufficient justification to support the proposal. Therefore, I no longer support the committee action and believe the proposal should be approved.

Gillengerten, J. Upon review, I believe based on the information provided the proposal should be approved.

Patel, J. ASTM D1784 specifies 2,000 psi as 'allowable stress' for CPVC piping, and ASTM B88 provides 11,000 psi as allowable stress for all copper pipe that envelops all types of copper piping.

13-345 9.3.5.3.5 (Log # 404)

Affirmative with Comment

Deneff, C. See my comments on Proposal 13-341 (Log 514).

13-351 9.3.5.6.4 and 9.3.5.6.4.1 (Log # 205)

Affirmative with Comment

Deneff, C. Would prefer to present this in a table, perhaps as length of branch line vs allowable height of riser nipple. The formula seems a bit complex.

Valentine, V. The formula should have subscripts for the second letter of each of the first three variables. The proper symbol should also be put in for "less than or equal to".

13-354 9.3.5.9.1.1 (Log # 444)

Negative

Valentine, V. There are instances where the horizontal load imposed by an earthquake could overturn thin structural members, especially when they are connected to the bottom of a beam. Additional consideration should be given to this item.

Affirmative with Comment

Thacker, J. It is the responsibility of the structural engineer to determine whether or not the structural member is adequately restrained from over turning. Structural members are often equipped with flange braces or other such elements to prevent over turning.

13-356 9.3.5.10.3 (Log # 524)

Affirmative with Comment

Deneff, C. See comments under Proposal 13-338 (Log CP 102): In some cases, listed capacity of braces may already have been resolved to horizontal, in which case 9.3.5.2.3 would not need to be applied. Suggest changing that verbiage to "9.3.5.2.3 Where listed loads have not been resolved to horizontal, the listed load along the brace shall be reduced as shown in Table 9.3.5.2.3 for installations where the brace is less than 90 degrees from vertical."

13-358 9.3.6.1(6) (New) (Log # 68)

Negative

Deutsch, J. With respect to section 9.3.4 and the existing 9 sub sections it seems clear that sprinkler pipe is not intended to be up tight to something substantially solid or strong such that it could break the pipe in a seismic event. Section 9.3.4.5 allows for an omission of clearance but only when flexible couplings are on either side of the penetration. These couplings are to let the pipe which is held tight in the penetration move without breaking. It appears that this proposal would not require flexible couplings on either side of a penetration. By accepting this proposal, every penetration would not need clearance or couplings, every penetration would simply be considered to be providing support. An example would be pipe tight below composite wood joist which has to penetrate through a hole in a GLB or WF beam. Currently the penetration would need clearance or couplings but if this proposal is accepted then the hole would only need to be large enough for the pipe, the hangers on either side of the penetration would be eliminated as the penetration would be used for support. It is not good practice to eliminate clearance, couplings and hangers just to reduce the size of a penetration. If this is accepted, then every penetration will simply be considered to be providing support and clearance, couplings and hangers will not be provided. As written this proposal would be applicable to any penetration in a structural member and while this proposal may be appropriate in some situations like a parking garage, it is not appropriate for all situations.

Kirschner, K. NOT ALL CPVC hangers with two points of attachment are listed for restraint.

Many CPVC are listed for restraint and they should be used.

Comparison to U-Hooks is irrelevant. U-Hooks are vastly superior do to their leg angularity and material mass.

Why over reach to provide expediency to contractors when no product problem exists?

Affirmative with Comment

Deneff, C. I agree with K. Kirschner's comments that only CPVC hangers that are listed for restraint should be used. Verbiage to that effect should be added.

13-360 9.3.7.8 (New) and A.9.1.3 (Log # 511)

Negative

Bachman, R. I am of the opinion that the requested proposal is justified and consistent with current building code requirements. I therefore do not support the committee action.

Deutsch, J. This is already a requirement being enforced in many building codes. By rejecting this proposal we are just sticking our heads in the ground and hoping it will go away.

Gillengerten, J. Upon review, I believe this proposal is consistent with requirements of the current building codes.

Thacker, J. This is already a requirement of the building codes. Also please explain, "and commentary" in the proposed section.

Valentine, V. This requirement is needed in NFPA 13 because it is required by the building codes, which supersedes NFPA 13. Section 1912 of the 2009 IBC states, "...this section shall govern the strength design of anchors installed in concrete for purposes of transmitting structural loads from one connected element to the other..." The load of the sprinkler system is a structural load, but the user is brought to this section where earthquake loads are involved. This section goes on to refer the user to ACI 318, Appendix D which in turn brings the user to ACI 355.2. The prequalification of all post-installed anchors is required in earthquake areas. Currently, NFPA 13 addresses this for use of concrete anchors in sway brace assemblies. However, the information should also be provided to the user for hangers where the system is subject to seismic forces. It should be noted that Section 1912 applies across the board for domestic water systems and other building systems.

Affirmative with Comment

Deneff, C. The requirement to use ACI 355.2 for bolts to concrete is justified for braces because they are subject to a large concentrated force. For typical hangers (not near braces) gravity forces are often not large (15 ft. of Sch 40 steel pipe is under 100 lb for pipe 2 inches and less). It seems like overkill to require ACI 355.2 compliant bolts for these cases. The current California Division of the State Architect IR 19-1 allows expansion anchors for non-structural (e.g., equipment, piping) applications to be sized using allowable stress techniques using 80% of non-inspected tension values. It seems like a similar technique might be used by NFPA, particularly for piping that does not require bracing. Where pipes are larger and must be braced, perhaps a different approach could be taken (at least for the hangers adjacent to braces). Also, it seems like current Section 9.3.7.7 which requires powder-driven studs be listed for use in earthquake zones only where the horizontal force factor exceeds 0.5 Wp should be modified since these clearly would not meet ACI 355.2. The CA DSA only allows powder-driven fasteners for very light items like suspended ceilings. I note that a task group was formed regarding Proposal 13-360. I assume this means that a proposal will be generated for consideration in the ROC phase. This task group should also clarify what load the hanger anchor bolt should resist vs. what allowable (is it 5 times weight +250 per 9.1.1.2 vs ultimate or the values given in 9.1.3.9.3 vs. ultimate or weight of pipe + 250 vs. ASD value) since this is very confusing in the code.

13-361 9.3.8 (Log # 445)

Negative

Valentine, V. This is a pointer so that the user, when looking for earthquake requirements, can clearly note that there are a couple of sections that handle minimum pipe sizes when revamping a system in an area subject to earthquake forces. There are instances where an older section of an existing building may be brought up to current seismic protection standards. The minimum pipe sizes needs to be considered as part of that retrofit.

13-556 A.9.3.4 (Log # 522)

Negative

Deutsch, J. The requirement for over sized holes is not a part of NFPA 13 and does not belong in NFPA 13. I feel that the requirement should not even exist in other standards. When the sheering of sprinklers has occurred, it has not been clear as to what type of sway bracing (if any) was installed or if the ceiling was installed to ASTM C635, C636. I am not aware of any damage of sprinklers in which the sprinkler system has been sway braced and restrained in conformance with current NFPA standards the ceiling has been installed in ceilings conforming to current standards. When sheering has occurred it is not even clear as to what type of sprinkler was sheered recessed or pendent sprinkler on a 2 piece escutcheon. A pipe supplying a pendent head which penetrates a frangible suspended ceiling tile does not require clearance as per section 9.3.4.4. Why should ALL sprinklers without flexible hose fittings be required to have an oversized hole?

Thacker, J. Sprinkler failures in systems which are braced to the current standards has not been well documented. An oversized hole is not a requirement of NFPA 13.

Affirmative with Comment

Bachman, R. I am in agreement with this proposal but 2 requested additional changes.

1. In the second line of the proposed revised change, I would request that word "connection" be replaced by the words "sprinkler hose fitting". This is the adopted wording for these type of connections that is referenced throughout NFPA-13.

2. At the end of the proposed revised wording (after Motions), I would request that the following wording be added: "that have been seismically qualified by testing based upon a nationally recognized testing standards such as AC-156". It is necessary to demonstrate that flexible hose fittings will perform as intended during design earthquake motions. The added wording is consistent with the testing requirement language specified in Section 13.2.5 of ASCE 7-10.

13-557 A.9.3.5 (Log # 137)

Negative

Kirschner, K. Descriptive text is valuable to AHJ's to enhance their Q.C. efforts.

We have a Q.C. text for hangers at A.9.2

It is logical for AHJ's to request a similar Q.C. text for sway braces.

This T.C. should honor their request.

13-558 Figure A.9.3.5.6(a) through Figure A.9.3.5.6(d) (Log # CP106)

Affirmative with Comment

Valentine, V. Figure A.9.3.5.6(b) has three arrows from "lateral brace" the top two should be removed as one points to a longitudinal brace and the other points to nothing.