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MEMORANDUM

TO: Correlating Committee on Fire and Emergency Services Protective Clothing and Equipment

FROM: Yvonne Smith, *Committee Administrator*

DATE: August 13, 2021

SUBJECT: NFPA 1970 (1971) Proposed TIA No. 1594 **FINAL CC BALLOT RESULTS**

The public comment circulation has passed, therefore, according to 5.6(b) in the NFPA *Regs*, the final results show this TIA **HAS NOT** achieved the $\frac{3}{4}$ majority vote needed on both Ballot Item No. 1 (**Correlation Issues**) and Ballot Item No. 2 (**Emergency Nature**).

27 Eligible to Vote

4 Not Returned (*Area, Fargo, Johnston, Legendre*)

Correlation Issues:

5 Abstentions (*Allen, Barker, Lancaster, Mauti, Morris*)

9 Agree (*5 w/comment: Arrington, Hess, Menard, Stull, Swan*)

9 Disagree (*Hosea, Lehtonen, Matthews, McKenna, Newsom, Tutterow, Van Lent, Weise, Winer*)

Emergency Nature:

5 Abstentions (*Allen, Barker, Lancaster, Mauti, Morris*)

4 Agree (*1 w/comment: Stull*)

14 Disagree (*Arrington, Farley, Hess, Hosea, Lehtonen, Matthews, McKenna, Newsom, Sanders, Tutterow, Van Lent, Varner, Weise, Winer*)

There are two criteria necessary to pass ballot [(1) simple majority (2) affirmative vote of $\frac{3}{4}$ of ballots received]. Both questions must pass ballot in order to recommend that the Standards Council issue this TIA.

- (1) In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required.

$$[27 \text{ eligible} \div 2 = 13.5 = \mathbf{(14)}]$$

- (2) The number of affirmative votes needed to satisfy the $\frac{3}{4}$ requirement is **14**.
($27 \text{ eligible to vote} - 4 \text{ not returned} - 5 \text{ abstentions} = 18 \times 0.75 = 13.5$)
Ballot comments are attached for your review.

The *Regs* at 1.6.2.(c) state: An appeal relating to a proposed Tentative Interim Amendment that has been submitted for processing pursuant to Section 5.2 shall be filed no later than 5 days after the notice of the TIA final ballot results are published in accordance with 4.2.6.



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Appeal Closing Date for this TIA is August 18, 2021.

NFPA 1971-2018 Edition

Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting

TIA Log No.: 1594

Reference: 7.1.23, 8.62, Table A.4.3.4(a), Table A.4.3.4(f) and Table B.2

Comment Closing Date: August 4, 2021

Submitter: Edward Kelly, International Association of Fire Fighters

www.nfpa.org/1971

1. Delete paragraph 7.1.23 in its entirety and renumber subsequent sections accordingly as follows:

~~7.1.23~~ Garment moisture barrier materials shall be tested for resistance to light degradation as specified in Section 8.62, Light Degradation Resistance Test, and water shall not appear on the surface of the specimen.

~~7.1.24~~ ~~7.1.23~~ Garment zippers ...

~~7.1.25~~ ~~7.1.24~~ Fastener Tape ...

~~7.1.26~~ ~~7.1.25~~ Fastener Tape ...

~~7.1.27~~ ~~7.1.26~~ Fastener Tape...

2. Delete Section 8.62 in its entirety, including associated Annex material, and renumber subsequent sections accordingly:

~~**8.62 Light Degradation Resistance Test.**~~

~~**8.62.1 Application.** This test method shall apply to moisture barrier materials.~~

~~**8.62.2 Samples.**~~

~~**8.62.2.1** Samples for conditioning shall be at least 380 mm (15 in.) square and shall consist of a composite constructed using a layer of 7.5 oz woven 93 percent meta aramid, 5 percent para aramid, 2 percent antistat fiber, the moisture barrier, a layer of 3.8 oz ± 0.3 oz, aramid needle punched nonwoven, quilted to a 3.4 oz ± 0.2 oz, aramid woven plain weave thermal barrier material, and another layer of 7.5 oz woven 93 percent meta aramid, 5 percent para aramid, 2 percent antistat fiber. The four layer composite sample shall be stitched around the entire periphery.~~

~~**8.62.2.2** Where the layer intended to be the moisture barrier is configured of a composite that includes outer shell, moisture barrier, or thermal barrier combinations, the samples to be conditioned shall be constructed using those materials.~~

~~**8.62.2.3** The moisture barrier layer shall be removed from the four layer composite samples after all conditioning has been completed and shall become the moisture barrier specimen.~~

~~**8.62.2.4** Where the moisture barrier is configured as indicated in 8.62.2.2, specimens shall be permitted to be a composite of layers provided that the layer intended to be the moisture barrier will face the light source in the test apparatus and provided that the specimen was conditioned according to 8.62.2.2.~~

~~**8.62.3** Sample Preparation. Sample composites shall be subjected to two cycles of the following conditioning:~~

~~(1) The sample shall first be subjected to the procedure specified in 8.1.2.~~

~~(2) The sample shall then be conditioned as specified in 8.1.3.~~

~~(3) The sample shall then be conditioned as specified in 8.1.5.~~

~~(4) The sample shall then be conditioned at a temperature of 21°C ± 3°C (70°F ± 5°F), and a relative humidity of 65 percent ± 5 percent for at least 4 hours.~~

8.62.4 Specimen Preparation.

8.62.4.1 The moisture barrier material will be removed from the conditioned sample composite and be cut into specimens at least 150 mm (6 in.) square.

8.62.4.2 A minimum of four specimens shall be tested.

8.62.5 Procedure.

8.62.5.1 Light resistance testing shall be conducted in accordance with ASTM G155, Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials, using Cycle 8 Exposure Conditions. Both inner and outer filters shall be borosilicate. Exposure duration shall not include dark cycles.

8.62.5.2* For each specimen, a piece of cardstock shall be cut in equal dimensions to the specimen. The specimen shall be stapled to the cardstock at each corner with the film side of the specimen away from the cardstock. The cardstock-backed specimen shall be clipped into the test apparatus, insuring clips do not contact the specimen, and the film side of the specimen is oriented toward the light source.

A.8.62.5.2 A readily available white cardstock material of 1.29 mm (0.05 in.) thickness is suitable for use as a backing material to keep the material flat and unaffected by the air currents created in the test apparatus.

8.62.5.3 Specimens shall be subjected to 40 hours of continuous light exposure.

8.62.5.4 Specimens shall be removed from the test apparatus and conditioned in a dark environment at a temperature of 21°C ± 3°C (70°F ± 5°F), and a relative humidity of 65 percent ± 5 percent, for at least 4 hours.

8.62.5.5 Specimens shall be tested in accordance with ASTM D751, Standard Methods for Testing Coated Fabrics, Hydrostatic Resistance, Procedure B—Rising Column Water Method, Procedure 2, Sections 46–49, with the following modifications:

- (1) Alternative test apparatus shall be permitted provided that the exposed area of the specimen is at least 108 mm (4 1/4 in.) in diameter and the pressure can be applied uniformly over the exposure period at a precision of ± 0.1 kPa (± 0.2 psi).
- (2) The applied pressure shall be 13.8 kPa (2 psi) for an exposure period of 1 minute.
- (3) Restraining materials shall not be used.
- (4) Failing performance shall be if any water appears on the surface of the specimen during the exposure period as discerned by a person with 20/20 vision, or vision corrected to 20/20, at a nominal distance of 305 mm (12 in.) with standard room illumination.

8.62.5.5.1 The moisture barrier specimen shall be placed in the apparatus with the film side facing away from the water source.

8.62.6 Reports. The pass or fail performance for each specimen shall be recorded and reported.

8.62.7 Interpretation. One or more test failures of any specimen shall constitute failure of material.

3. Delete the line entry for “Light degradation resistance” in Table A.4.3.4(a) as shown:

Table A.4.3.4(a) Testing Structural Fire Fighting Garments

Test	Section Number	Test Material or Component											Conditioning			
		Garments	Com- posite	Outer Shell	Moisture Barrier	Thermal Barrier	Winter Liner	Labels	Other Materials	Thread	Seams	Hard- ware	Trim	Washing/ Drying ^a	Room Temp ^b	Convective Heat ^c
...																
Light degradation resistance	8.61				X									X	X	X

...

4. Delete the line entry for “Light degradation resistance” in Table A.4.3.4(f) as shown:

Table A.4.3.4(f) Testing Proximity Fire Fighting Garments

Test	Section Number	Test Material or Composite									Conditioning					
		Garments	Com- posite	Outer Shell	Moisture Barrier	Thermal Barrier	Winter Liner	Labels	Other Materials	Thread	Seams	Hard- ware	Trim	Washing/ Drying ^a	Room Temp ^b	Convective Heat ^c
Light degradation resistance	8.61													X	X	X

...

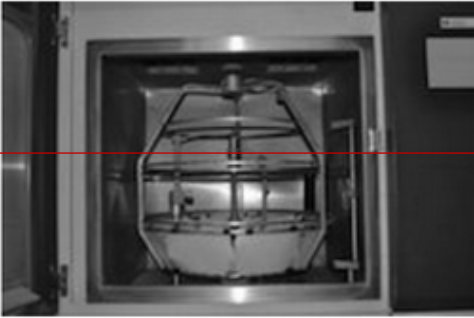
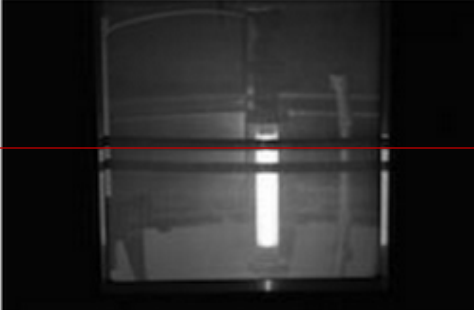
5. Delete the line entry 7.1.23, and photos for “Exterior of Xenon Apparatus” and “Interior of Xenon Apparatus in Use”, and update the cross references in Table B.2 Garments as shown here:

Table B.2 Garments.

...

7.1.23 Light Degradation Resistance Test (moisture barrier)	<p>This test is performed in accordance with ASTM G155, Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials, on moisture barrier materials. Samples are conditioned for laundry and heat in specially made pockets comprised of two layers of outer shell and one layer of thermal barrier.</p> <p>After conditioning, the specimens are exposed to continuous light for 40 hours using a xenon apparatus, then conditioned in a dark, temperature-controlled room. The specimens are then tested by applying pressure with water for 1 minute in accordance with ASTM D751, Standard Test Methods for Coated Fabrics.</p>	<p>The Light Degradation Resistance Test is used to measure how much the moisture barrier degrades as a result of excessive light exposure, and the performance requirement sets a minimum exposure limit.</p> <p>Often, the moisture barrier is the first part of the ensemble to fail, especially if it has been exposed to prolonged sunlight or artificial light. This test is a measure of the durability of the moisture barrier.</p>
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Table B.2 Continued

Test Method	Test Method Description	Test Method Application
	<p>Exterior of Xenon Apparatus.</p>	
	<p>Interior of Xenon Apparatus in Use.</p>	

7.1.24 7.1.23 Zipper Strength Test ...

7.1.25 7.1.24 Fastener Tape ...

7.1.26 7.1.25 Fastener Tape ...

7.1.27 7.1.26 Fastener Tape...

Substantiation: Section 8.62 of NFPA Standard 1971 requires a light degradation resistance test for “moisture barrier materials.” Turnout gear pants and jackets are comprised of an outer shell, a moisture barrier, and a thermal barrier. Practically speaking, this means that the middle layer of three-layer turnout gear needs to pass this light degradation resistance test. This specific requirement is preventing non-Teflon (i.e., non per- and polyfluoroalkyl substances, or PFAS) moisture barriers from being used.

The use of PFAS in turnout gear poses a problem for firefighters and the communities in which they live. PFAS are a class of human-made chemicals that have an incredibly strong carbon-fluorine bond that forms the backbone of each molecule. Because of this strong carbon-fluorine bond, PFAS do not easily break down in the environment and are often referred to as “forever chemicals.” PFAS are associated with liver damage, thyroid disease, developmental issues, reduced fertility, high cholesterol, obesity, hormone suppression, and cancer.

Our specific concerns are set forth below.

NFPA Standard 1971 contains a conflict within the NFPA Standard. Although NFPA Standard 1971 states that it applies to “moisture barrier materials,” it does not appear that all boots and gloves – both containing moisture barriers - are subject to the light degradation

resistance test. The moisture barrier in firefighter boots and gloves is, in some cases, PTFE (otherwise known as Teflon, which is a PFAS), but in other cases it is a polyurethane.

The light degradation resistance test is also not necessary, and does not accomplish what it was intended to do: prevent the breakdown of the moisture barrier under UV light. UV light does not penetrate into the moisture barrier unless there is a tear in the turnout gear. The researcher who proposed the light degradation resistance test [stated](#) that moisture barriers of gear could be exposed to sunlight or fluorescent light when turnout gear is cleaned, and the purpose of the provision was to "prevent future failures" of the gear. However, this exposure to light is highly unlikely, as the moisture barrier film is sandwiched between the outer shell and the thermal layer, and faces *in* toward the interior of the lining. Thus, the light degradation resistance test does not protect the moisture barrier from UV degradation in any way.

Therefore, because the light degradation resistance test applies to only some moisture barriers in the protective ensemble, but not all, there is a conflict within NFPA Standard 1971. In addition, the test does not make sense given the construction of turnout gear as required by NFPA Standard 1971.

The proposed TIA intends to correct a previously unknown existing hazard. The inner moisture barrier layer of turnout gear is manufactured from PTFE, and is usually covered with a thermal liner, closest to the skin, made from untreated fabric. There is also an outer shell layer that provides both water and oil resistance. A peer-reviewed reviewed study from 2020 found “significant quantities of fluorochemicals are being shed from the textiles used in PPE for firefighters during the in-service lifetime of the garment.” In fact, the PFAS migrated from the treated moisture barrier into the other layers of the gear. Moreover, fluorine levels in the turnout gear were roughly 2% of the garments, an extraordinarily high level. This study suggested that the PFAS in the turnout gear may be a “direct pathway” for PFAS to enter firefighters’ bodies, through dermal absorption and inhalation.

Firefighters have higher rates of cancer than the general population. Another 2020 peer-reviewed study showed firefighters have higher levels of PFAS in their blood serum. In 2019, more than 75% of line-of-duty firefighter deaths were from occupational cancer.

When NFPA Standard 1971 was written in 2006 to include the light degradation resistance test for moisture barrier materials, neither the firefighters, the International Association of Fire Fighters (IAFF), or the NFPA knew how much PFAS was in turnout gear, nor how it migrated onto skin where it could be dermally absorbed and inhaled by firefighters. Moreover, it was only recently that the alarm sounded about the ability of fairly low levels of PFAS to cause cancer.

Therefore, the proposed TIA intends to correct a previously unknown existing hazard. By removing the light degradation resistance test, turnout gear can be PFAS-free, which would reduce the risk of PFAS entering firefighters’ bodies through their gear.

The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation. As stated above, removing the light degradation resistance test from the moisture barrier layer of turnout gear will reduce

firefighters' exposure to PFAS, thus reducing their risk of cancer and other PFAS-related diseases. Moreover, it is abundantly clear that the vast majority of firefighters do not want PFAS in their turnout gear; Resolution 28, which called for the IAFF to no longer accept sponsorships from the chemical industry, textile manufacturers or PPE manufacturers that use PFAS passed 1,536 to 10; and Resolution 31, which called for the IAFF to actively oppose the use of PFAS in turnout gear passed 1,472 to 4.

In addition to lessening a recognized hazard to the firefighters themselves, removal of the light degradation resistance test will also ameliorate a dangerous situation for communities having fire stations. Dr. Graham Peaslee of Notre Dame University has been studying PFAS in turnout gear, and he states that a single firefighter coat is enough to contaminate 400 Olympic sized swimming pools. Every time firefighters wash their turnout gear, PFAS-laden water gets into the wastewater from washing machines, some of which undoubtedly contaminates soil, groundwater, and even drinking water. Moreover, old gear which is being disposed will end up in landfills, leaching more PFAS into surrounding areas.

By removing the light degradation resistance test from the moisture barrier layer of turnout gear, both firefighters and the public will benefit by reducing the amount of PFAS exposure to them and their communities.

Emergency Nature: The standard contains a conflict within the NFPA Standard or within another NFPA Standard. The proposed TIA intends to correct a previously unknown existing hazard. The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation.

NFPA Standard 1971 is no longer accepting public comments. In fact, the web page states: Please note: This Standard is slipping cycle due to the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council. As part of the consolidation plan, this Standard is slipping cycle and being combined into a new consolidated draft, NFPA 1970. Once the draft is available and open for public input on the NFPA 1970 page, a link to the submission system will be updated. We have no idea when the new consolidated draft of NFPA 1970 will be available for comment, and it is imperative that we remove PFAS from turnout gear as soon as possible in order to reduce the risk of firefighter cancer. It is also important to note that the light degradation resistance test is not necessary to protect firefighters. Dr. Peaslee stated that, "...there's nothing essential about PFAS in the gear. You can make a perfectly safe garment without it." Prior to Teflon being in the gear, firefighters used to rely on polyurethane as a moisture barrier. Currently, companies are working on developing PFAS-free gear, and they already have two PFAS-free outer layers available for purchase. Because of the federal void in regulating PFAS, a number of states are passing legislation relative to PFAS in firefighting gear. Kentucky, Massachusetts, and Texas have pending legislation, and Washington has already passed legislation requiring notification that PFAS is in personal protective equipment (PPE). States are also requiring that preference be given to purchasing non-PFAS firefighting equipment while also considering outright bans on the sale of PFAS-containing gear. This is an emerging issue, and more and more states are passing these bills in order to protect their firefighters and their communities. However, because there is currently no PFAS-free moisture barrier available, solely because of the light degradation

resistance test, there is no way for gear to comply with these new laws. All moisture barriers certified to meet NFPA Standard 1971 must currently contain PFAS. Once these bills are enacted, states will be unable to purchase PFAS-free gear because of Section 8.62 of NFPA Standard 1971. Finally, financially strapped communities are finding their drinking water contaminated with PFAS, and many towns find themselves struggling to purchase multi-million dollar filtration systems to comply with new state Maximum Contaminant Levels (MCLs) in soil, groundwater, and drinking water. Continued use of PFAS-laden turnout gear will continue to contaminate communities, and the vicious cycle of contamination will continue. This dilemma will come to a head in coming months. Unless NFPA deletes Section 8.62 of NFPA Standard 1971, it will be impossible for fire departments to comply with both NFPA Standards and state law. This puts these fire departments in an untenable position. In conclusion, the adverse health effects associated with PFAS-laden turnout gear, together with the conflicts between NFPA Standard 1971 and state laws, is resulting in an emergency situation which can only be remedied by the deletion of Section 8.62 and all other relevant sections noted above, from NFPA Standard 1971.

I AGREE there are no CORRELATION ISSUES in accordance with 3.4.2 and 3.4.3 of the NFPA Regs.

Eligible to Vote: 27

Not Returned : 4

Cristine Z. Fargo, Jeff Legendre, James B. Area, Ronald Johnston

Vote Selection	Votes	Comments
Agree	9	
Stephen R. Sanders		Agree
Diane B. Hess		Agree The TC has reported twice now on the balloted TIA 1594. And the required ¾ majority vote was not achieved. Multiple comments requesting research, further discussions on benefits and risks, function, and performance of the MB with finish changes, durability, and unintended consequences, indicate that further work is required in regard to various subject matters to make educated decisions of performance requirements.
Joseph Arrington		There are no correlation issues, however this TIA has not passed majority vote by the TC due to requesting further research and testing. Indicating to me that a vote by the CC is premature on this TIA.
Jeffrey O. Stull		There are no correlation issues with other standards under the jurisdiction of the Correlating Committee; however, there are correlation issues within NFPA 1971 itself on two levels: (1) the test is not applied to all moisture barrier materials used in other elements of the protective ensemble, namely gloves and footwear; and (2) the type of exposure -- intensive, prolonged UV light -- is not applied to the portions of the ensemble elements that are most likely to be adversely affected by this exposure, i.e., element outer shell materials.
Bruce H. Varner		Agree
Jonathan V. Szalajda		agree
Douglas Menard		C. This is a great first step in protecting the end user from unknowingly being exposed to PFAS.
Rick L. Swan		The test was not designed to determine what caused the problem but to remove a problem. There are many better ways to deal with these issues and that could possibly bring in alternative technology, which would be highly scrutinized.

Edmund Farley

Disagree

Karen E. Lehtonen

Amanda H. Newsom

Agree

9

There is not a correlation concern over this test not applying to other elements containing moisture barriers. There are several examples in this project of specific tests applying to one element and not another. Additionally, at the time of inclusion, the NFPA 1971 durability task group did not recommend application of this test to gloves and footwear due to differing useful life expectancy of those elements as well as the construction of the barriers in those elements.

The proposal intends to remove a test that would not cause inconsistency between standards related to testing. However, the TIA indicates that there is a conflict within the standard. It is true that only the moisture barriers used within the coat and pant are tested for light degradation. When the test method was added to the standard, this was the only element that had a known degradation issue. The issue was brought to the committee in the form of concerns from a user and these concerns were replicated in a test laboratory. As a result, the test procedure was added to the standard. Additionally, the moisture barrier materials used within gloves and footwear do not have the likelihood of exposure in the same manner as turnout gear, where the outer shell and the liner can be separated. The inner lining of footwear and lining within gloves are permanently attached. It should also be noted that there is a lack of data and science related to the performance of alternative materials and the TC should give due consideration to how they would perform before eliminating a test.

Robert D. Tutterow, Jr.

I cannot support this TIA and I do not feel good about not supporting it. On the other hand, if I supported the TIA, I would not feel good about that decision either. The main reason I do not support this TIA is because of unintended consequences. The technical committee is faced with a choice of eliminating one health hazard and possibly bringing on other health hazard(s), which could be worse hazard(s). The cure cannot be worse than the disease. The reason PFAS are used in PPE moisture barriers is to increase the durability. There are products on the market that do not have PFAS that might be durable, but they add tremendous heat stress to the firefighter. This test was put into the standard approximately twenty years ago to address known failures of one moisture barrier that was on the market at the time. Though not an ideal test, it has more or less served its purpose. The fire service MUST have durable PPE. Regardless of the outcome of this PPE, improved ways of testing for durability are needed. Everyone wants to get rid of PFAS. They have been referred to as the “forever chemical” as apparently the only way to eliminate them is incineration. Since hardly anyone, if anyone, is incinerating their PPE when it is retired, it is a known fact that these “forever chemicals” are getting into ground water. I sincerely appreciate the IAFF for taking the initiative to get them out of emergency responder PPE. I fully support their intent, but I think we need a lot more information about what is or might soon be available. For example, several members of the technical committee are aware of a possible AFG R&D grant that has a strong chance of being awarded to Dr. Bryan Ormond of N.C. State University to study this issue. Though it takes away from the urgency of the matter, the best solution for now might be to address this issue with public inputs for the next revision cycle. This buys a little time to make a more educated decision. No one knows how many firefighters get cancer from the PFAS in their PPE. No one knows what the impact on durability will be if this test is removed. From a process standpoint, these two unknowns do not meet the criteria for adding or removing a test as instructed by the correlating committee. The end-result of this TIA could well be that we are swapping one hazard for another hazard. Regardless of the outcome of this TIA, I hope the research and testing needed to address this issue now moves to “warp-speed” as soon as possible.

David G. Matthews

The TC do not appear to have considered this matter in detail, nor prepared a report based on scientific research. If the TC provides substantiated evidence based on scientific data as to the risks from PFAS contained in moisture barriers there would be correlating issues with other standards where moisture barriers are optional

Michael F. McKenna

I disagree and believe this will cause correlating issues. The issue of potential firefighter exposure to PFAS in protective clothing has not been properly studied and as such there is no way to know what issues may surface by removing this singular test method. Assuming the goal is to eliminate wearer exposure to PTFE, the removal of this single test method that is not used in all element testing creates conflicts within the document and correlation issues within the project. For example, this TIA does not address any potential PFAS exposure to a firefighter wearing a certified particle blocking hood that includes a PTFE barrier. The hood by its very design may only have a single layer of knitted material between the PTFE and the wearer. This TIA also does not address structural gloves, or boots with PTFE moisture barriers. Lastly, this TIA creates correlation issues between NFPA 1971 and, for example, NFPA 1999 where a certified garment uses a PTFE moisture barrier. In a NFPA 1999 garment, there may be less layers to protect the wearer from any protentional PFAS exposure from a PTFE moisture barrier. If the ultimate goal is to remove firefighters from potential PFAS exposure it needs to be done every place there is any potential exposure.

Harry P. Winer

I believe there is a correlation issue. The author is trying to eliminate PTEF films from fire suits by deleting this test. We have PTFE films throughout various fire service standards. So we have to act as a correlating committee to look at it project wide. The author also didn't make a compelling argument on what would happen if we just got rid of the test method. Are we opening ourselves to additional hazards by eliminating the test method without replacing it with something else.

Thomas M. Hosea

The reasoning behind the TIA is to remove PFAS, though the standard change proposed does not actually eliminate PTFE films by removing this test. PTFE are used in other standards so this could be a correlating issue even though removal of the test itself may not

William A. Van Lent

he
NFPA has established guidance on "addition or modification of testing" which references (6) definitive steps for implementing these types of changes. At this point, none of these steps have been reported in the TIA. Additionally, the TC balloting has failed and lack of analysis and impact testing has been cited. Therefore, firefighter safety is of critical importance requiring more thorough investigative testing before removing this requirement.

Dick Weise

There are regrettable substitutes and unattended consequences associated in this direction, is the intent to remove all PFA's from materials, are there minimum allowable or acceptable levels, are there truly any studies that indicate the risk or benefits. Is it elimination or health reduction that we are trying to achieve ? I support the NFPA process to further study and research to make a long term decision.

Abstain

Jason L. Allen

5

While I see the potential flaws in the test vs real world I think further work is needed to issue a suitable replacement
Insufficient information to evaluate technical merit of the TIA.

Roger L. Barker

Abstain

Beth C. Lancaster

TC needs to resolve.

John H. Morris

Benjamin Mauti

The mixed comments on the technical committee vote suggest that any correlation determination at this point could be premature and should await the work of the technical committee as part of the normal review process. MSA and Globe support progress towards additional PFAS free options in turnout gear. Further review by the technical committee is needed to ensure that removing the UV test will help achieve that end and will not compromise firefighter safety.

I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the Instructions box.

Eligible to Vote: 27

Not Returned : 4

Cristine Z. Fargo,Jeff Legendre,James B. Area,Ronald
Johnston

Vote Selection

Votes Comments

Agree

4

Jeffrey O. Stull

Reasons B and F. The emergency for removing this test existed when the test was introduced. In addition to the information provided in my Technical Committee ballot, I would point out that this test when incorporated into NFPA 1971, while well intentioned, was not the appropriate test to single out an element material that was later discovered to be defective. The test is akin to requiring vehicles to survive a 200 mph crash because a particular vehicle caused injuries in an accident. The fact is that even with the research that went into this test, it was never shown to provide findings relevant to field observations. This was one of the reasons why I later petitioned the Correlating Committee to establish guidelines for the needed steps to properly validate new and revised test methods.

Jonathan V. Szalajda
Douglas Menard
Rick L. Swan

agree

C.

The proposed TIA intends to correct a previously unknown existing hazard.

Disagree

Karen E. Lehtonen

14

Existing data does not support the need for emergency measures that could create uncertainty and potentially compromise safety without appropriate study. Currently available studies on PFAS in firefighters provide no evidence that trace amounts of PFAS from turnout gear are entering into firefighters' blood, or at levels that cause adverse health effects. The Firefighter Cancer Cohort Study (FFCCS) has published one paper, which has indicated no association between PFAS and firefighter cardiovascular disease. The FFCCS found elevated levels of two PFAS---PFOS and PFHXS in firefighters' blood. PFOS and PFHXS are known ingredients in AFFF foams and potentially in materials such as carpeting and furniture in the fire environment and were never used in the manufacture of new firefighter turnout gear textiles or finishes. The CDC states that the risks of dermal absorption from PFAS are very low. Based on a review of extensive research, CDC ATSDR stated in its most recent guidance for clinicians, "Dermal absorption of PFAS through the skin is limited and is of minimal concern as an exposure route." FFCCS and NIST have begun studies of turnout gear and PFAS exposures in firefighters and the results should be assessed before conclusions made. NFPA 1970 (for which NFPA 1971 will be contained within) is currently open for public input and a task group within the Technical Committee has been established. The changes proposed by the TIA should be addressed in the upcoming revision cycle for this standard.

Amanda H. Newsom	While we appreciate the concerns of this issue, the emergency nature of this proposal was not presented. The current standard is now open for public input, therefore any revisions can be submitted through the revision process so that proper consideration may be given to the change.
Stephen R. Sanders	The performance test covered by this TIA has been in previous editions of this standard and has not been a concern that warranted a change previously. This does not constitute an emergency nature.
Diane B. Hess	Due to the NFPA consolidation program, the new consolidated document, NFPA 1970, which includes NFPA 1970 (combining Standards NFPA 1971, NFPA 1975, NFPA 1981, and NFPA 1982) is open for public input with a closing date of November 10, 2021. Therefore, the TC committee and the designated Task Group, can further discuss benefits, risks, performance, durability, unintended consequences, indicate further work required and then make educated decisions for the needed performance requirements for Fire Fighter PPE.
Joseph Arrington	The TC has indicated a desire for further research and discussion on this TIA. Therefore this does not meet the criteria for emergency nature.
Robert D. Tutterow, Jr. David G. Matthews	Disagree Due to NFPA 1971 being in revision cycle there is the opportunity for the TC to address identified and proven scientific issues and make proposals as to how these can be overcome with proposed changes to NFPA 1971. As the Technical Correlating Committee and Correlating Committee has in the past addressed issues around the moisture barrier, it does not all into the Emergency nature for a TIA This TIA has the potential for unintended consequential safety hazards to firefighters being encountered
Michael F. McKenna	I do not believe that this is of emergency nature. This topic has not been properly studied and any changes should be done through the normal public input. The document is currently open open for public input.
Harry P. Winer	There is no emergency nature the test has been in the standard for 10 - 12 years and is not a safety problem. What the test method does is a good question that we should investigate for the next edition of the standard coming up soon.

Bruce H. Varner

1970(1971) is currently open for public comment. Additional discussion and technical work should be completed by the technical committee, the PPE industry, and the scientific community to fully understand and adequately address this issue and determine the impact of all recommended public inputs and committee actions to avoid unintended consequences that could further impact firefighter safety. The firefighting environment is the greatest source of PFAS contamination, and the fire service has only very recently taken actions to reduce those exposures. Let's be very careful not to create additional hazards to firefighters by hasty and passion driven decisions. This comment in no way intends to disrespect the seriousness of and the impacts of firefighter cancer or the IAFF's and many other organizations commitment to firefighter safety.

Thomas M. Hosea

I do not believe enough information has been provided to form a consensus on if PFTE films are a direct safety hazard in this application to make this an emergency nature. The unintended consequences of making a change could potentially place firefighters at more risk. The TC should address these health hazards through the revision cycle unless hard evidence can be presented.

William A. Van Lent
Dick Weise

No information has been presented supporting emergency nature.
Need a full evaluation to determine as many risks and benefits associated.

Edmund Farley
Abstain

I do not agree this is of emergency nature
5

Jason L. Allen
Roger L. Barker

Above
Insufficient technical information to evaluate the emergency nature of the TIA.

Beth C. Lancaster

Based on the TC ballot results it appears additional discussion is needed by the technical committee and to adequately address this issue.

John H. Morris
Benjamin Mauti

TC needs to resolve.
Based on the unclear impact, and since the standard is currently in revision and now open for public input, the technical committee should conduct a full review. MSA and Globe support progress towards additional PFAS free options in turnout gear. Further review by the technical committee is needed to ensure that removing the UV test will help achieve that end and will not compromise firefighter safety.

TENTATIVE INTERIM AMENDMENT BALLOT
EMERGENCY NATURE SELECTION OF RESPONSES

- A.** The standard contains an error or an omission that was overlooked during the regular revision process.
- B.** The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard.
- C.** The proposed TIA intends to correct a previously unknown existing hazard.
- D.** The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation.
- E.** The proposed TIA intends to accomplish a recognition of an advance in the art of safeguarding property or life where an alternative method is not in current use or is unavailable to the public.
- F.** The proposed TIA intends to correct a circumstance in which the revised NFPA Standard has resulted in an adverse impact on a product or method that was inadvertently overlooked in the total revision process or was without adequate technical (safety) justification for the action.