Second Revision No. 8-NFPA 1975-2018 [Section No. 1.2.2]

1.2.2*

Controlled laboratory tests used to determine compliance with the performance requirements of this standard shall not be deemed as establishing performance levels for all situations to which emergency services personnel might be exposed.

A.1.2.2

Certain performance attributes of station work uniforms cannot be adequately assessed under controlled laboratory conditions. An example of such attributes are claims of moisture management. Many manufacturers claim moisture management properties of base-layer garments, but there is currently no standardized means of adequately assessing the impact on fire fighter safety. The impact on fire fighter safety can vary in different scenarios, depending on the primary protective clothing worn over the station work uniform. Another example is claims of odor resistance. While it might be important for certain users, there is currently no standardized means of adequately assessing the impact of odor resistance on fire fighter safety.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jan 31 11:43:30 EST 2018

Committee Statement

Committee Statement: The comment does not meet the purpose of the standard as stated in 1.2.1. This odor resistance does not impact firefighter safety as it is recommended the uniform is washed on a frequent basis. Annex language was added at 1.2.2 to address claims of odor resistance by manufacturers. The Technical Committee reviewed the comment over antimicrobial properties. This standard did not address antimicrobial performance, it only addressed odor resistance. The scope of this standard addresses non-primary protective garments. In an environment where antimicrobial could protect the user, the user should consider wearing other primary protective garments appropriate for the conditions.

Response Message:

Public Comment No. 19-NFPA 1975-2017 [Global Input]

Second Revision No. 6-NFPA 1975-2018 [Chapter 2]

Chapter 2 Referenced Publications

2.1 General.

The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.2 NFPA Publications. (Reserved)

2.3 Other Publications.

2.3.1 AATCC Publications.

American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, NC 27709.

AATCC 42, *Water Resistance: Impact Penetration Test*, ~~2013~~ 2017 .

AATCC 135, *Dimensional Changes of Fabrics After Automatic Home Laundering*, 2004.

AATCC 158, *Dimensional Changes on Dry-Cleaning in Perchloroethylene: Machine Method*, 2016.

2.3.2 ASTM Publications.

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM D751, *Standard Test Methods for Coated Fabrics*, 2011.

ASTM D1683/D1683M, *Standard Test Method for Failure in Sewn Seams of Woven Fabrics*, ~~2016~~ 2017e1 .

ASTM D1776/D1776M, *Standard Practice for Conditioning and Testing Textiles*, 2016.

ASTM D6413/D6413M, *Standard Test Method for Flame Resistance of Textiles (Vertical Test)*, 2015.

ASTM D6797, *Standard Test Method for Bursting Strength of Fabrics Constant Rate of Extension (CRE) Ball Burst Test*, 2015.

ASTM D7138, *Standard Test Method to Determine Melting Temperature of Synthetic Fibers* , 2016.

ASTM F2894, *Standard Test Method for Evaluation of Materials, Protective Clothing and Equipment for Heat Resistance Using a Hot Air Circulating Oven*, 2014.

2.3.3 ISO Publications.

International Organization for Standardization, ISO Central Secretariat, BIBC II, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland.

ISO Guide 27, *Guidelines for corrective action to be taken by a certification body in the event of misuse of its mark of conformity*, 1983.

~~ISO 9001, *Quality management systems — Requirements,* 2008.~~

ISO 9001, *Quality management systems — Requirements*, 2015.

ISO 17011, *General requirements for accreditation bodies accrediting conformity assessment bodies,* 2004.

ISO/IEC 17021, *Conformity assessment — Requirements for bodies providing audit and certification of management systems — Part 1: Requirements,* 2015.

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*, 2005.

ISO/IEC 17065, *Conformity assessment — Requirements for bodies certifying products, processes and services*, 2012.

2.3.4 Other Publications.

Merriam-Webster's Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003.

U.S. Department of Defense GL/PD 07-13C, *Purchase Description Coat, Army Combat Uniform,* U.S. Army Natick Research, Development and Engineering Center, Attn: RDNS-WPW-C, Kansas Street, Natick, MA 01760-5019, 2011.

2.4 References for Extracts in Mandatory Sections. (Reserved)

Supplemental Information

File Name	Description	Approved
1975-2014_Chapter_2_SR.docx	for staff use only	

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jan 31 11:37:00 EST 2018

Committee Statement

Committee Statement: Added reference to thread melting test in chapter 8. Updated additions.
Response Message:

Public Comment No. 4-NFPA 1975-2017 [Section No. 2.3.2]

Second Revision No. 1-NFPA 1975-2018 [Section No. 5.1.7]

5.1.7

The following information shall also be printed legibly on the product label. All letters shall be at least ~~2~~ 1.6 mm (1⁄16 in.) high:

(1) Manufacturer’s name

(2) Manufacturer's garment identification number, lot number, or serial number

(3) Country of manufacture

(4) Model name, number, or design

(5) Date of manufacture

(6) Size

(7) Cleaning and drying instructions, including applicable warnings regarding detergents, soaps, cleaning additives, and bleaches

(8) Fiber content and composition

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jan 31 10:39:23 EST 2018

Committee Statement

Committee Statement: This change is being made to align this standard with other standards in the project.
Response Message:

Public Comment No. 2-NFPA 1975-2017 [Section No. 5.1.7]

Second Revision No. 2-NFPA 1975-2018 [Section No. 7.1.1.2]

7.1.1.2

Findings and visibility markings — excluding labels and excluding emblems, collar stays, elastic, and hook- and- pile fasteners ~~when~~ placed where they will not come into direct contact with the body — shall be tested individually for heat resistance as specified in Section 8.2, and shall not melt, drip, separate, or ignite.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jan 31 10:42:05 EST 2018

Committee Statement

Committee Statement: Clarifies that labels are not to be subjected to this test.
Response Message:

Public Comment No. 1-NFPA 1975-2017 [Section No. 7.1.1.2]

Second Revision No. 3-NFPA 1975-2018 [Section No. 8.7]

8.7 Thread Heat Resistance Test.

8.7.1 Application.

This test method shall apply to each type of thread used in the construction of work apparel.

8.7.2 ~~Samples~~ Procedure .

~~Samples for conditioning shall be 150 mm (6 in.) or greater lengths of thread.~~ Specimens shall be tested to a temperature of 260°C (500°F) in accordance with ASTM D7138, *Standard Test Method to Determine Melting Temperature of Synthetic Fibers.*

8.7.2.1

Where garments are certified to meet only the base requirements of this standard, the thread shall be tested using either Method 1 or Method 2 as specified by the garment manufacturer.

8.7.2.2

Where garments are certified to meet the optional flame resistance requirements of this standard, the thread shall be tested using Method 1.

~~**8.7.3** Specimens.~~

~~**8.7.3.1**~~

~~A total of three different specimens of each thread type shall be tested.~~

~~**8.7.3.2**~~

~~All specimens shall be conditioned as specified in 8.1.2 prior to testing.~~

~~**8.7.4** Apparatus.~~

~~**8.7.4.1**~~

~~An electrically heated stage, having a circular depression large enough to insert a micro cover glass shall be used. The stage shall have a variable transformer controlling the rate of heat input into the stage.~~

~~**8.7.4.2**~~

~~The following equipment shall also be used:~~

- ~~Armored stem thermometer with a range of 20°C to 160°C, accurate to 0.5°C~~
- ~~Armored stem thermometer with a range of 150°C to 300°C, accurate to 1°C~~
- ~~A low-powered magnifying glass~~
- ~~Two micro cover glasses~~
- ~~Spatula, pick needle, or other instrument for applying pressure to the cover glasses~~
- ~~Soxhlet extraction apparatus~~

8.7.4.3

The following reagents shall be used:

Chloroform, USP

* U.S. Pharmacopeia reference standards for melting point for calibrating the apparatus

A.8.7.4.3(2) –

Six standards for use in calibrating melting point apparatus can be obtained from the U.S. Pharmacopeia Reference Standards, 46 Park Avenue, New York, NY 10016.

8.7.5 Procedure.

8.7.5.1

The specimen shall be extracted with chloroform for a minimum of 20 extractions in a Soxhlet extractor and dried. The specimen shall then be cut into lengths of 2 mm ($^{1}/_{16}$ in.) or less).

8.7.5.2

The apparatus shall be calibrated by determining the melting point of a pure material of known melting point. The melting point of the pure material shall be in the range of the melting point of the fiber being tested. The value obtained shall agree within 1°C of the known value.

8.7.5.3

Where the approximate melting point of the specimen is not known before testing, it shall be determined by a trial run.

8.7.5.4

In subsequent determinations immediately following the trial run or initial determination, the stage in each case shall be cooled to at least 50°C below the expected melting point, before the specimen is placed for testing.

8.7.5.5

The specimen shall be placed in a small mound on a cover glass and covered with another cover glass. The two cover glasses shall be pressed together and placed in the circular depression on the stage. The temperature of the stage shall be raised to within 15°C of the expected melting point, and thereafter at a rate of 3°C to 4°C per minute. At this rate of temperature rise, a slight pressure shall be applied on the upper glass cover by pressing with a spatula, pick needle, or other instrument so that the complete fiber is in contact with the cover glass.

8.7.5.6

The specimen shall be observed with the aid of a magnifying glass and the melting point taken as the temperature at which flow of the specimen is observed. At the observed melting point, the temperature shall be read to the nearest degree C.

8.7.3 Report.

8.7.3.1

The melting point of the sample unit shall be the average of the results obtained from the specimens tested and shall be recorded and reported to the nearest degree C.

8.7.3.2

The pass or fail results for each specimen tested shall be recorded and reported.

8.7.4 Interpretation.

One or more thread specimens failing this test shall constitute failing performance for the thread type.

Supplemental Information

File Name	Description	Approved
FR_3_8.7.docx	FOR STAFF USE	

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jan 31 10:54:32 EST 2018

Committee Statement

Committee Statement: Changes the test method used for thread melting temperature to the ASTM standard. This allows to use both the DSC method and the heated stage method, depending on the type of garment being certified. Aligns this standard with other documents in the project.

Response Message:

Public Comment No. 3-NFPA 1975-2017 [Section No. 8.7]

Second Revision No. 4-NFPA 1975-2018 [Section No. A.4.5.3]

See SR-4

~~**A.4.5.3**~~

~~In September of 2015, a revised edition of ISO 9001, *Quality management systems — Requirements* , was issued. Both the 2008 and 2015 editions of the standard are being referenced in this revision of NFPA 1975 to allow manufacturers sufficient time to transition their quality management systems registration to this new edition.~~

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jan 31 11:28:11 EST 2018

Committee Statement

Committee Statement: Grandfathering period has lapsed and no longer applies.
Response Message:

Second Revision No. 5-NFPA 1975-2018 [Section No. B.6.2]

B.6.2 Description of Test Method.

The referenced thread melting test method in ASTM D7138, *Standard Test Method to Determine Melting Temperature of Synthetic Fibers*, contains the following two methods for the determination of the thread or fiber melting point:

In Method 1, a specimen of fiber and a reference sample are positioned into the designated heating blocks of a differential scanning calorimetry (DSC) instrument. The instrument then increases the heat and determines the melting point of the specimen materials.

In Method 2, a small segment of thread used in the stitching of work apparel is placed in a flask containing an organic solvent and heated. (The solvent extracts substances that would interfere with the test.) Next, the extracted thread segment is put in a device that slowly heats the thread. The temperature at which the thread begins to melt is the melting temperature.

Supplemental Information

File Name	Description	Approved
SR_5_legislative_changes.docx	FOR STAFF USE	

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jan 31 11:32:29 EST 2018

Committee Statement

Committee Statement: Reflecting changes in 8.7 to the thread melting temperature test.
Response Message:

Second Revision No. 7-NFPA 1975-2018 [Chapter C]

Annex C Informational References

C.1 Referenced Publications.

The documents or portions thereof listed in this annex are referenced within the informational sections of this standard and are not part of the requirements of this document unless also listed in Chapter 2 for other reasons.

C.1.1 NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 1581, *Standard on Fire Department Infection Control Program*, 2015 edition.

NFPA 1951, *Standard on Protective Ensembles for Technical Rescue Incidents*, ~~2018~~ 2013 edition.

NFPA 1977, *Standard on Protective Clothing and Equipment for Wildland Fire Fighting*, 2016 edition.

NFPA 1994, *Standard on Protective Ensembles for First Responders to Hazardous Materials Emergencies and CBRN Terrorism Incidents*, 2018 edition.

NFPA 1999 , *Standard on Protective Clothing and Ensembles for Emergency Medical Operations* , 2018 edition.

C.1.2 Other Publications.

C.1.2.1 AATCC Publications.

American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, NC 27709.

AATCC 42, *Water Resistance: Impact Penetration Test*, ~~2013~~ 2017 .

AATCC 135, *Dimensional Changes of Fabrics After Automatic Home Laundering*, 2004.

AATCC 158, *Dimensional Changes on Dry-Cleaning in Perchloroethylene: Machine Method*, 2016.

C.1.2.2 ASTM Publications.

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM D751, *Standard Test Methods for Coated Fabrics*, 2011.

ASTM D1683/D1683M, *Standard Test Method for Failure in Sewn Seams of Woven Apparel Fabrics*, 2016.

ASTM D6413/D6413M, *Flame Resistance of Textiles (Vertical Test)*, 2015.

ASTM D6797, *Standard Test Method for Bursting Strength of Fabrics Constant Rate of Extension (CRE) Ball Burst Test*, 2015.

ASTM D7138 , *Standard Test Method to Determine Melting Temperature of Synthetic Fibers* , 2016.

ASTM F1731, *Standard Practice for Body Measurements and Sizing of Fire and Rescue Services Uniforms and Other Thermal Hazard Protective Clothing*, 2013.

ASTM F2894 *Standard Test Method for Evaluation of Materials, Protective Clothing and Equipment for Heat Resistance Using a Hot Air Circulating Oven*, 2014.

C.1.2.3 ISEA Publications.

International Safety Equipment Association, 1901 North Moore Street, Arlington, VA 22209-1762.

ANSI/ISEA 107, *High-Visibility Safety Apparel and Accessories*, 2015.

ANSI/ISEA 207, *High-Visibility Public Safety Vests*, 2011.

C.1.2.4 ISO Publications.

International Organization for Standardization, ISO Central Secretariat, BIBC II, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland.

ISO Guide 27, *Guidelines for corrective action to be taken by a certification body in the event of misuse of its mark of conformity*, 1983.

~~ISO 9001, *Quality management systems — Requirements,* 2008.~~

~~ISO 9001, *Quality management systems — Requirements,* 2015.~~

ISO/IEC 17065, *Conformity assessment — Requirements for bodies certifying products, processes and services*, 2012.

C.1.2.5 U.S. Government Publications.

U.S. Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001.

FHA *Manual on Uniform Traffic Control Devices*, 2012.

Title 21, Code of Federal Regulations, Part 7, Subpart C.

Title 23, Code of Federal Regulations, Part 655, "Traffic Operations."

Title 29, Code of Federal Regulations, Part 1910.1030, 6 March 1992.

Title 42, Code of Federal Regulations, Part 84, Subpart E.

C.1.2.6 Other Publications.

U.S. Department of Defense GL/PD 07-13C, *Purchase Description Coat, Army Combat Uniform*, U.S. Army Natick Research, Development and Engineering Center, Attn: RDNS-WPW-C, Kansas Street, Natick MA 01760-5019, 2011.

C.2 Informational References. (Reserved)

C.3 References for Extracts in Informational Sections. (Reserved)

Supplemental Information

File Name	Description	Approved
1975-2014_Annex_C_SR.docx	for staff use	

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jan 31 11:40:37 EST 2018

Committee Statement

Committee Update referenced documents and added thread melting test as referred to in

Statement:	chapter 8.
Response Message:	