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NFPA 1975 Station/Work Uniforms for Fire Fighters 1985 Edition



National Fire Protection Association Battery March Park, Quincy, MA 02269

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There is a concern that the growing use of synthetic materials may produce more or additional toxic products of combustion in a fire environment. The Board has, therefore, asked all NFPA technical committees to review the documents for which they are responsible to be sure that the documents respond to this current concern. To assist the committees in meeting this request, the Board has appointed an advisory committee to provide specific guidance to the technical committees on questions relating to assessing the hazards of the products of combustion.

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NFPA 1975

Standard on

Station/Work Uniforms for Fire Fighters

1985 Edition

This edition of NFPA 1975, *Standard on Station/Work Uniforms for Fire Fighters*, was prepared by the Technical Committee on Protective Equipment for Fire Fighters, and acted on by the National Fire Protection Association, Inc. at its Annual Meeting held May 13-17, 1985 in Chicago, Illinois. It was issued by the Standards Council on June 6, 1985, with an effective date of June 26, 1985.

The 1985 edition of this standard has been approved by the American National Standards Institute.

Origin and Development of NFPA 1975

The Technical Committee on Protective Equipment for Fire Fighters began work on this standard in 1982 in answer to requests from the fire service to establish requirements for clothing, such as station uniforms or work uniforms, that are worn under protective clothing. The work was completed in the Spring of 1984 and submitted to the NFPA for official adoption. The first edition was issued in June 1985.

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NFPA 1975**Standard on****Station/Work Uniforms for Fire Fighters****1985 Edition**

NOTICE: An asterisk (*) following the number or letter designating a paragraph indicates explanatory material on that paragraph in Appendix A.

Information on referenced publications can be found in Chapter 4 and Appendix B.

Chapter 1 Administration**1-1 Scope.**

1-1.1* This standard specifies minimum general requirements, minimum performance requirements, and test methods for textile materials used in the construction of station/work uniforms.

1-1.2 This standard applies to station/work uniforms designed to be worn under protective clothing by structural fire fighters.

1-2 Purpose.

1-2.1* The purpose of this standard is to provide a fire fighter with a station/work uniform which when worn under protective clothing will not contribute to fire fighter injury and will not cause any degradation of the performance features of the fire fighter protective clothing.

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 fire fighting personnel may be exposed.

1-2.3* This standard is not intended to serve as a detailed manufacturing or purchase specification, but can be referenced in purchase specifications to ensure that minimum performance requirements are met.

1-3 Definitions.

Components. All materials used in construction of station uniforms, except fabric, including but not limited to thread, trim, facing, bindings, zippers, and labels.

Flame Resistance. The property of a material whereby flaming combustion is prevented, terminated, or inhibited following application of a flaming or non-flaming source of ignition, with or without subsequent removal of the ignition source. Flame resistance can be an inherent property of the textile material, or it may be imparted by specific treatment.

Inherent Flame Resistance. As applied to textiles, flame resistance that is derived from an essential

characteristic of the fiber or polymer from which the textile is made.

Shall. This term indicates a mandatory requirement.

Should. This term, as used in Appendix A, indicates a recommendation or that which is advised but not required.

Station/Work Uniforms. Garments, worn under protective clothing, consisting of trousers, shirts, jackets, or coveralls, but excluding underwear.

Structural Fire Fighters. Fire fighters who engage in the physical activity of rescue, fire suppression, or both, at incidents in buildings, enclosed structures, vehicles, vessels or like properties that are involved in a fire or emergency situation.

Chapter 2 Garment Requirements**2-1 General.**

2-1.1 Manufacturers of station/work uniforms using textile materials meeting the requirements of this standard shall provide upon request a certification statement that the garment was constructed with textile materials and components which meet the requirements of the standard and data substantiating the conformance.

2-1.2 A statement regarding the textile materials' resistance to chemicals as specified by the purchaser shall be provided on request.

2-1.3 All components of garments shall not burn or melt when placed in a 250°C (482°F) (+10°C -0°C), 5 (+5, -0) CFM, forced air oven for five minutes.

2-1.4* The manufacturer shall provide care and cleaning instructions with each garment.

2-2 Labeling.

2-2.1 Labels shall be permanently attached to each station/work uniform garment that meets the requirements of this standard, indicating the textile material(s) used in the construction of that station/work uniform garment, and specific care instructions.

2-2.1.1 Labels shall be clearly legible before and after the flame resistance durability tests specified in Section 3-3 of this standard.

2-2.2 The label(s) shall also include the following information:

- (a) Name or designation of manufacturer
- (b) Style, name, number, or design
- (c) Cut, serial, or textile material number
- (d) Statement: "This garment meets all requirements of NFPA 1975, *Standard on Station/Work Uniforms for Fire Fighters*. WARNING: Do not wear alone for

limb/torso protection during structural fire fighting. Failure to comply with this warning may result in serious injury or death. DO NOT REMOVE THIS LABEL."

Chapter 3 Performance Requirements

3-1 Textile Samples.

3-1.1 A two-yard sample shall be taken from each textile material production lot, or from every 5000 yards, whichever is less.

3-1.2 These samples shall be coded, identified as to lot number, tested, and retained for at least 24 months, or the expected distribution and service life of the garment, whichever is greater.

3-2 Flame and Thermal Test.

3-2.1 Textile material in the original state as sampled, as specified in 3-1.1 of this chapter, shall be tested as specified in this section.

3-2.2 Textile material washed or drycleaned, as specified in 3-3.1 or 3-3.2 of this chapter, shall be tested as specified in this section.

3-2.3 The textile material shall be tested in accordance with Federal Test Method Standard 191, Method 5903, and shall have an average char length not greater than 6.0 in. with afterflame of not greater than 2.0 seconds.

3-2.4 The ignition of the textile material during the conduct of the test specified in 3-2.3 of this section shall not produce any melting or dripping of molten or flaming substance.

3-2.5 The textile material may discolor but shall not separate or melt when placed in a forced air laboratory oven at a temperature of 482°F (250°C) for a period of five minutes.

3-3 Flame Resistance Durability Test.

3-3.1 For textile materials intended to be laundered, the flame resistance as specified in Section 3-2 of this chapter shall be met after 50 launderings, following the procedure specified in AATCC Method 135 3II, B.

3-3.1.1 For textile materials that are sensitive to the high phosphate AATCC 124 detergent specified in 3-1.1 of this chapter, a substitute test detergent may be employed for the 50 laundering flammability durability test.

3-3.2 For textile materials intended to be drycleaned only, the flame resistance, specified in Section 3-2 of this chapter, shall be met after 25 commercial drycleanings.

3-3.3 Textile materials with flame resistance as an inherent property of the basic material shall not be required to be tested for durability specified in 3-2.2 of this chapter provided that a statement of certification of the inherent characteristics of the textile material and supporting data is furnished by the textile material supplier.

Chapter 4 Referenced Publications

4-1* The following documents or portions thereof are referenced within this standard and shall be considered part of the requirements of this document. The edition indicated for each reference shall be current as of the date of the NFPA issuance of this document.

4-1.1* AATCC Publication.

AATCC Method 135-1978, *Dimensional Changes in Automatic Home Laundering of Woven and Knit Fabrics*

4-1.2* Federal Test Method Standard 191, *Textile Test Methods*, 1978.

Appendix A

This Appendix is not a part of the requirements of this NFPA document but is included for information purposes only.

A-1-1.1 Textile fabric experience has shown that fabrics meeting Table A-1-1.1 are additional minimum specifications that purchasers should consider.

Table A-1-1.1

| Material Property (Method) | Woven Trousers, Jackets | Woven Shirts | Knit Tee Shirts | Knit Sweat Shirts |
|--|-------------------------|----------------|-----------------|-------------------|
| Fabric Weight (oz/yd ²) (min) (ASTM D 3776-79) | 5.5 | 4.0 | 3.0 | 7.0 |
| Tensile Strength, Grap (lb), (min) (ASTM D 1682) | 50 | 20 | — | — |
| Tear Strength (lb), (min) (ASTM D 1424) | 5.0 | 2.0 | — | — |
| Burst (lb), (min) (ASTM D 3787-80) | — | — | 35 | 50 |
| Shrinkage (% max) *(AATCC 135-1978, 3, 11, B, 5 washes) | 3.0 | 3.0 | 5.0 | 5.0 |
| Colorfastness | | | | |
| **Laundering (AATCC 61-1980, 11, A) | 3 | 3 | 3 | 3 |
| Crocking (AATCC 8-1981) | 3 | 3 | 3 | 3 |
| Light (AATCC 16E-1982) | 20 AFU: Step 3 | 20 AFU: Step 3 | 20 AFU: Step 3 | 20 AFU: Step 3 |
| Seam Efficiency (%) (ASTM D 1683) | 75 | 75 | 75 | 75 |

*For fabrics labeled "dryclean only" use AATCC 158-1979, 5 drycleanings.

**For garments labeled "dryclean only" use AATCC method 132-1979.

A-1-2.1 Dress uniforms are not intended to be worn under fire fighters' protective clothing. However, if dress uniforms are worn under protective clothing, they should meet minimum performance criteria established in this standard.

A-1-2.3 The purchaser should provide the vendor with a detailed specification for the specific performance and design criteria. Also, the purchaser should establish criteria whereby periodically new uniforms are inspected for compliance.

A-2-1.4 Manufacturers should provide instructions for repair of station/work uniforms.

A-3-3.1.1 An example of an alternate detergent for use is IEC Test Detergent (BS 5651).

A-4-1 These references are listed separately to facilitate updating to the latest edition by the user.

A-4-1.1 AATCC publications are available from the American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, North Carolina 27709.

A-4-1.2 Federal Test Method standards are available from the U.S. Government Printing Office, Washington, DC 20402.

Appendix B Referenced Publications

B-1 This Appendix lists publications which are referenced within this NFPA document for information purposes only and thus is not considered part of the requirements of the document.

B-1.1 The following publications are available from ASTM, 1916 Race Street, Philadelphia, PA 19103.

ASTM D 1424, *Standard Test Method for Tear Resistance of Woven Fabrics by Falling-Pendulum (Elmendorf) Apparatus*, 1981 edition

ASTM D 1682, *Standard Test Methods for Breaking Load and Elongation of Textile Fabrics*, 1975 edition

ASTM D 1683, *Standard Test Method for Failure in Sewn Seams of Woven Fabrics*, 1981 edition

ASTM D 3776, *Standard Test Method for Weight (mass per unit area) of Woven Fabric*, 1979 edition

ASTM D 3787, *Standard Test Method for Bursting Strength of Knitted Goods-Constant-Rate-of-Traverse (CRT) Ball Burst Test*, 1980 edition

B-1.2 The following publications are available from American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, NC 27709.

AATCC 8, *Colorfastness to Cracking*, 1981 edition

AATCC 16E, *Colorfastness to Light: Water-Cooled Xenon-Arc Lamp, Continuous Light*, 1982 edition

AATCC 61, *Colorfastness to Washing, Domestic; and Laundering, Commercial: Accelerated*, 1980 edition

AATCC 135, *Dimensional Changes in Automatic Home Laundering of Woven and Knit Fabrics*, 1978 edition

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5. Check the box indicating whether or not this proposal is original material, and if it is not, indicate source.
6. If supplementary material (photographs, diagrams, reports, etc.) is included, you may be required to submit sufficient copies for all members and alternates of the technical committee.

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- (d) proposed text of proposal, including the wording to be added, revised (and how revised), or deleted.

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Address 9 Seattle St., Seattle, WA 02255

Organization Represented Fire Marshals Assn. of North America

Document Title: Protective Signaling Systems NFPA No. & Year NFPA 72D

1. Section/Paragraph: 2-7.1 (Exception)

2. Proposal (include proposed wording, or identification of wording to be deleted):

Delete exception.

3. Statement of Problem and Substantiation for Proposal:

A properly installed and maintained system should be free of ground faults. The occurrence of one or more ground faults should be required to cause a "trouble" signal because it indicates a condition that could contribute to future malfunction of the system. Ground fault protection has been widely available on these systems for years and its cost is negligible. Requiring it on all systems will promote better installations, maintenance and reliability.

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