AS 4967:2019

Australian STANDARD

Protective clothing for firefighters — Requirements and test methods for protective clothing used for structural firefighting

STANDARDS Australia

AS 4967:2019

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The following are represented on Committee SF-049:

Association of Accredited Certification Bodies
Australasian Fire and Emergency Service Authorities Council
Australian Chamber of Commerce and Industry
Australian Fashion Council
Australian Industry Group
AWTA Product Testing (Testing Interests Australia)
BSI Group Australian and New Zealand (Certification Bodies)
CSIRO
Department of Defence (Australian Government)
Footwear Manufacturers Association of Australia
NSW Rural Fire Service Association
United Firefighters Union of Australia
VicLabs (Testing Interests Australia)

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Originated as AS 4967(Int)—2001.
Previous edition AS/NZS 4967:2009.
Fourth edition AS 4967:2019.

Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF-049, Firefighters Personal Protective Equipment, to supersede AS/NZS 4967:2009.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to provide manufacturers, suppliers, laboratories and end users with a clear statement of the minimum requirements for apparel for structural firefighters.

Standards Australia thanks the International Organization for Standardization (ISO) for permission to reproduce definitions from ISO 11999-1:2015. These definitions are copyright of ISO, Geneva, Switzerland. All rights reserved.

Changes to this edition include the revision and updating of referenced documents such as the following:

(a) Replacement of references to EN 340 with ISO 13688.

(b) Replacement of references to AS/NZS 4360 with AS/NZS ISO 31000.

(c) Replacement of references to AS 2001.5.4 with ISO 6330.

(d) Replacement of references to AS 2001.2.3.1 with ISO 13934-1.

(e) Replacement of references to ISO 12127 with ISO 12127-1.

(f) Replacement of references to EN 20811 with ISO 811.

(g) Replacement of references to ISO 13506 with ISO 13506-1 and ISO 13506-2.

In the longer term, the Committee is committed to developing a single standard for all items of personal protective equipment used for structural firefighting.

Notes are used in this Standard to provide additional information to explain, or assist in the understanding of, the text, figure or table.

The terms “normative” and “informative” are used in Standards to define the application of the appendices to which they apply. A “normative” appendix is an integral part of a Standard, whereas an “informative” appendix is only for information and guidance.

Contents

Introduction

While there are command and control procedures employed, the tactics used and the duties and responsibilities of firefighters may vary from one jurisdiction to another, in general terms, the objectives of a firefighter at an incident can be summarized as follows:

(a) The saving of life and provision of humanitarian services.

(b) The prevention or minimization of damage to property.

(c) The prevention or minimization of damage to the environment.

The function of personal protective equipment (PPE) is to protect the firefighter while enabling the firefighter to achieve these objectives. In addition, in emergency situations where it is impossible to achieve the objectives, the PPE should, as far as reasonably practical, safeguard the firefighter, allowing the firefighter to escape safely to a place of safety. This Standard establishes minimum requirements for structural firefighting protective ensembles and ensemble elements designed to provide firefighting personnel with limited protection from thermal, physical and environment hazards encountered during structural firefighting operations.

Employers have a responsibility to carry out a risk assessment before deciding on the type of PPE that is most suitable to protect the personnel under their control in their "work place". The duties and responsibilities of firefighters should be taken into account when assessing the risk and the appropriate PPE selected using the Standards required. In this way, operational procedures and different concepts of safety will both play a part in leading to the performance chosen. It must be remembered that risk assessments are a starting point for action, not an objective in themselves.

AS/NZS ISO 31000, *Risk management—Guidelines,* should be referred to when references to risk assessments are made.

Additional PPE to protect the head, face, hands and feet of firefighters should also be worn along with appropriate respiratory protection, where necessary. Currently, the relevant Standards for this PPE are as follows:

(i) Head — AS/NZS 4067, *Protective helmets for structural firefighting*.

(ii) Hands — AS/NZS 2161 (series), *Occupational protective gloves*.

(iii) Feet — AS/NZS 4821, *Protective footwear for firefighters — Requirements and test methods.*

(iv) Respiratory protection — AS/NZS 1716, *Respiratory protective devices*.

The specified controlled laboratory tests used to determine conformance to the performance requirements of this Standard do not replicate the situations to which firefighting personnel may be exposed. During an incident, hazards other than those against which clothing to this Standard is intended to protect may be encountered, e.g. chemical, biological, radiation or electrical. If the risk assessment identifies that exposure to such hazards is likely, protection by more appropriate PPE may be required either instead of or in addition to the protective clothing covered by this Standard.

It is essential that firefighters are trained in the use, care and maintenance of all PPE. This training should include an understanding of its limitations which includes the importance of removing PPE as soon as conditions allow after an incident, mainly for heat stress/physiological reasons.

Contamination or degradation of protective clothing will affect its performance. Protective clothing should be cleaned in accordance with the manufacturer's recommended instructions. All repairs or alterations to the clothing should only be carried out by qualified personnel in accordance with the manufacturer's instructions.

Nothing in this Standard is intended to restrict any jurisdiction, purchaser or manufacturer from exceeding these minimum requirements.

NOTES

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Section 1 Scope and general

1.1 Scope

This Standard specifies the minimum requirements and test methods for assessing protective clothing that is intended to be worn while engaged in interior attack, structural firefighting and associated activities where there is a risk of exposure to heat or flame or both.

This Standard covers the general clothing design, the minimum performance requirements of the materials used, and the test methods for determining these.

This Standard does not cover special clothing for use in other high risk situations such as specialized firefighting clothing (e.g. proximity firefighting clothing), or clothing for use in brush, wildland, or forest firefighting. It does not address protection for the head, hands and feet or protection against other hazards, e.g. chemical, biological, radiation and electrical hazards. These aspects may be dealt with in other Standards.

1.2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

AS 2001.2.25.2, *Methods of test for textiles, Part 2.25.2: Physical tests — Determination of the abrasion resistance of fabrics by the Martindale method — Determination of specimen breakdown*

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

AS/NZS 1906.1, *Retroreflective materials and devices for road traffic control purposes, Part 1: Retroreflective sheeting*

AS/NZS 1906.4, *Retroreflective materials and devices for road traffic control purposes, Part 4: High-visibility materials for safety garments*

AS/NZS 1957, *Textiles — Care labelling*

AS/NZS 2622, *Textile products — Fibre content labelling*

AS/NZS 4602.2, *High visibility safety garments, Part 2: Garments for fire service personnel*

AS/NZS ISO 6530, *Protective clothing — Protection against liquid chemicals — Test method for resistance of materials to penetration by liquids*

ISO 139, *Textiles — Standard atmospheres for conditioning and testing*

ISO 811, *Textiles — Determination of resistance to water penetration — Hydrostatic pressure test*

ISO 1421, *Rubber- or plastics-coated fabrics — Determination of tensile strength and elongation at break*

ISO 3146, *Plastics — Determination of melting behaviour (melting temperature or melting range) of semi-crystalline polymers by capillary tube and polarizing-microscope methods*

ISO 4674-1, *Rubber- or plastics-coated fabrics — Determination of tear resistance — Part 1: Constant rate of tear methods*

ISO 4920, *Textile fabrics — Determination of resistance to surface wetting (spray test)*

ISO 5077, *Textiles — Determination of dimensional change in washing and drying*