AS/NZS 4602.2:2013

Australian/New Zealand Standard™

High visibility safety garments

Part 2: Garments for fire service personnel

STANDARDS Australia

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Subcommittee SF-004-03, Light Reflective Protective Clothing, for Committee SF-004, Occupational Protective Clothing.

During the revision process of AS/NZS 4602:1999*, High visibility safety garments*, the Committee determined that all the specific needs of fire service personnel could not be addressed in its revision. It did, however, recognize the specific needs of the fire industry and the special nature of the work it is required to undertake. It was decided that the 1999 edition would be superseded by AS/NZS 4602.1:2011, *High visibility safety garments*, Part 1: *Garments for high risk applications*, and that a separate part (this Part 2) would be developed. High visibility safety garments for fire services were excluded from the scope of AS/NZS 4602.1 and a reference to this Part 2 was given.

The objective of the Standard is to define requirements for high visibility safety garments for fire service personnel working in smoke, traffic or other high risk situations.

The term 'informative' has been used in this Standard to define the application of the appendix to which it applies. An 'informative' appendix is only for information and guidance.

CONTENTS

FOREWORD

This Standard specifies high visibility safety garment requirements for fire service personnel working in smoke, traffic or other high risk situations without reference to particular garment types or styles and to provide the designer or purchaser as much flexibility as possible in selecting a suitable garment design.

It is important that in order to gain the most effective use from high visibility garments users have some understanding of the way in which fluorescent and retroreflective materials contribute to providing high visibility. These mechanisms are explained as follows:

(a) Fluorescent material incorporates dyes or pigments that have the property of converting light in the UV spectrum to light in the visible spectrum, hence noticeably increasing the amount of visible light reflected from its surface. It will therefore only work where there is an appreciable amount of UV light, i.e. daylight, falling on the material. Artificial night-time light sources contain little UV light. Two important points to note are, firstly, that in the process of UV light conversion the dyes and pigment particles undergo change, often leading to fairly rapid fading of the colour and, secondly, the dyes and pigments can usually only be applied to man-made fibres.

(b) Retroreflective materials as the name suggests, cause practically all of the light reflected from their surface to be directed back along the path of the incoming light beam. An observer will not gain the benefit of a retroreflective article unless he/she is observing it from a position closely aligned with, usually just behind, the light source, e.g. a motor vehicle driver sitting almost directly behind the vehicle headlights.

(c) Non-fluorescent material: Where for safety reasons a garment must be made from a natural fibre incapable of retaining a fluorescent colour, high-visibility non-fluorescent coloured material whose chromaticity coordinates lie within the same colour spaces specified in Table 1 for fluorescent colours may be substituted. Testing and requirements for high visibility non-fluorescent materials are specified in Clause 2.4 of AS/NZS 1906.4:2010.

Risk management entails the identification and analysis of all hazards likely to arise during an operation within a designated fire service activity, followed by the determination of appropriate measures to mitigate risk. The process is appropriate at all levels of planning and operation including the following:

(i) When preparing work method statements for the conduct of routine activities.

(ii) When preparing guidelines for more extensive or complex activities where site specific risks will assume importance.

In each case the process should be carried out by first identifying all the hazards likely to arise, evaluating them in terms of likelihood of occurrence and adverse consequences by using historical data, experience or other means. The proposed procedural statement should then be checked in detail to ensure that adequate means of controlling or reducing identified risk are in place.

This Standard sets out guidance and minimum requirements. Variations should only be undertaken on the basis of a documented risk assessment prepared by a competent person in consultation with affected parties. Where superior hazard controls are identified through this process they should be adopted in preference to minimum requirements.

More detail on the management of risk is given in AS/NZS ISO 31000, *Risk management—Principles and guidelines.*

Fire Agencies will be able to determine the best course of action, which may include compliance with one or a combination of any of the following:

(A) Comply with the requirements of AS/NZS 4602.1 for Class D/N.

(B) Comply with the requirements of AS/NZS 4602.2 (this Standard).

(C) Rely upon agency based risk mitigation measures implemented in conjunction with the use of garments certified to either AS/NZS 4824, *Protective clothing for firefighters—Requirements and test methods for protective clothing used for wildland firefighting* (ISO 15384:2003, MOD), or AS/NZS 4967, *Protective clothing for firefighters—Requirements and test methods for protective clothing used for structural firefighting*, when working in smoke, traffic or other high risk situations.

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1 SCOPE

This Standard specifies the visual performance requirements for garments independently certified as compliant with AS/NZS 4967 or AS/NZS 4824 used by fire service personnel through the addition of high visibility trim in specified pattern configurations.

NOTE: This Standard covers only the visual requirements of garments. It does not cover their physical integrity or fitness for use in adverse physical environments.

2 OBJECTIVE

The objective of this Standard is to specify the minimum performance requirements for firefighting garments so as to enhance visibility while working in smoke, and or near traffic, moving plant and equipment or other high risk situations where enhanced visibility improves the safety of the wearer.

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS/NZS

1906 Retroreflective materials and devices for road traffic control purposes

1906.4 Part 4: High visibility material for safety garments

4824 Protective clothing for firefighters—Requirements and test methods for protective clothing used for wildland firefighting (ISO 15384:2003, MOD)

4967 Protective clothing for firefighters—Requirements and test methods for protective clothing used for structural firefighting

4 DEFINITIONS

For the purpose of this Standard, the definitions in AS/NZS 1906.4 apply together with the following definitions.

4.1 Fire service personnel

Career, retained or volunteer fire service personnel who deal with fire and other emergencies.

4.2 High visibility trim

A material exhibiting separate performance or combined performance retroreflective and fluorescent properties.

NOTE: Retroreflective materials enhance night time visibility, and fluorescent materials improve daytime visibility.

4.3 Clothing assembly

Garments designed to be always worn together.