AS/NZS ISO 6530:2006
ISO 6530:2005
Reconfirmed 2017

Australian/New Zealand Standard™

Protective clothing—Protection against liquid chemicals—Test method for resistance of materials to penetration by liquids

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee SF-004, Occupational Protective Clothing. It was approved on behalf of the Council of Standards Australia on 24 February 2006 and on behalf of the Council of Standards New Zealand on 3 March 2006.
This Standard was published on 31 March 2006.

The following are represented on Committee SF-004:

Apparel & Textile Federation of NZ
Association of Accredited Certification Bodies
Australasian Fire Authorities Council
Australian Business Limited
Australian Chamber of Commerce and Industry
Australian Indutry Group
AWTA Textile Testing
Certification Interest (Australia)
Council of Textile and Fashion Industries of Australia
Department of Consumer & Employment Protection, WorkSafe Division (WA)
Department of Defence (Australia)
Textile Clothing & Footwear Union of Australia
The Australasian Assembly of Volunteer Fire Brigades Associations
United Firefighters Union of Australia
University of Otago, New Zealand
University of Western Sydney

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Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

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We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR 05562 and DR 06022.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

RECONFIRMATION

OF
AS/NZS ISO 6530:2006
Protective clothing—Protection against liquid chemicals—Test method for resistance of materials to penetration by liquids

RECONFIRMATION NOTICE

Technical Committee SF-004 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 23 November 2016.

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The following are represented on Technical Committee SF-004:

Australasian Fire and Emergency Service Authorities Council
Australian Chamber of Commerce and Industry
Australian Industry Group
AWTA Textile Testing
Certification Interests (Australia)
Communications, Electrical and Plumbing Union - Electrical Division
Council of Textile and Fashion Industries of Australia
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Safety Institute of Australia
Testing Interests (Australia)
Textile Clothing & Footwear Union of Australia
University of Otago New Zealand
University of Western Sydney

NOTES

Australian/New Zealand Standard™

Protective clothing—Protection against liquid chemicals—Test method for resistance of materials to penetration by liquids

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF-004, Occupational Protective Clothing to supersede in part AS 3762.2—1990, *Clothing for protection against hazardous chemicals,* Part 2*: Limited protection against specific chemicals.* It is identical with and has been reproduced from ISO 6530:2005, *Protective clothing—Protection against liquid chemicals—Resistance of materials to penetration by liquids.*

The objective of this Standard is to describe a laboratory test method for the measurement of penetration resistance of protective clothing materials from the impact and runoff of liquids. The objective of this revision is to adopt the current edition of ISO 6530.

As this Standard is reproduced from an ISO Standard, the following applies:

(a) Its number appears on the cover and title page while the ISO standard number appears only on the cover

(b) In the source text 'this International Standard' should read 'this Australian/New Zealand Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

In the course of considering adoption of this Standard, Committee SF-004 agreed that the reader's attention should be drawn to the following points:

(i) The issues of estimating and recording uncertainty in measurement is not addressed in this Standard. Users are encourages to refer to '*Guide to Expression of Uncertainty in Measurement'* issued by BIPM, IEC, IFCC, ISO, IUPAC, IUPAP and OIML.

(ii) Caution is urged as the differences between levels of performance are dependent on the precision of the measurement and may not accurately reflect conditions of end use.

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INTRODUCTION

This International Standard specifies a test method for measuring indices of penetration, absorption and repellency for protective clothing materials against low-volume, low-pressure splashes of liquid chemicals, usually chemicals of low volatility. ISO 13994 may be used for determining the penetration resistance of protective clothing materials against chemicals in larger volume and higher pressure splashes.

Clothing made of these materials should not be used as the sole means of protection where resistance to permeation by chemicals at the molecular level (see ISO 6529) is essential and where a complete barrier to liquid (or gaseous) chemicals is required (e.g. risk of exposure to massive and forceful discharges of concentrated liquid chemicals).

Data obtained by this test method may be used as a guide for screening protective clothing materials. Clothing, which has been developed from materials selected by this method of test should be used, therefore, only in well-defined circumstances when an evaluation of the finished item has indicated an acceptable level of performance (in laboratory and field-testing of a garment, consideration of exposure levels to specified chemicals, etc.).

In interpreting the results of the test method, the influences of the physical properties of the test chemical (e.g. volatility) should also be taken into consideration.

AUSTRALIAN/NEW ZEALAND STANDARD

Protective clothing — Protection against liquid chemicals — Test method for resistance of materials to penetration by liquids

1 Scope

This International Standard specifies a test method for the measurement of indices of penetration, absorption and repellency for protective clothing materials against liquid chemicals, mainly chemicals of low volatility.

Two levels of the potential performance of materials are assessed by this method of testing to meet with possible requirements for protection against

a) deposition on the surface of a material, at minimal pressure, of spray droplets up to coalescence or occasional small drips;

b) contamination by a single low-volume splash or low-pressure jet, allowing sufficient time to divest the clothing or take other action as necessary to eliminate any hazard to the wearer from chemical retained by the protective garment, or, in circumstances where pressure is applied to liquid contaminants on the surface of the clothing material, as a result of natural movements of the wearer (flexing of contaminated areas of clothing at arms, knees, shoulders) and contact with contaminated surfaces (e.g. walking through sprayed foliage).

2 Definitions

For the purpose of this document, the following terms and definitions apply.

2.1
penetration
process by which a chemical moves through pores, apertures or essential openings in a material or finished item of clothing

NOTE The apertures can be the result of mechanical damage.

2.2
permeation
process by which a chemical moves through a protective clothing material on a molecular level

NOTE Permeation involves the following:

a) sorption of the molecules of the chemical onto the contact surface (outer surface) of the material;

b) diffusion of the sorbed molecules into the material;

c) desorption of the molecules from the opposite (inner) surface of the material.

2.3
repellency
ability of a material to shed liquid that is applied to its surface