AS/NZS 2161.8:2002
EN 421:1994
Reconfirmed 2016

Australian/New Zealand Standard™

Occupational protective gloves

Part 8: Protection against ionizing radiation and radioactive contamination

Standards Australia
STANDARDS NEW ZEALAND

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee SF-023, Occupational Protective Gloves. It was approved on behalf of the Council of Standards Australia on 30 November 2001 and on behalf of the Council of Standards New Zealand on 1 February 2002. It was published on 21 February 2002.

The following interests are represented on Committee SF-023:

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This Standard was issued in draft form for comment as DR 95450.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

RECONFIRMATION

OF
AS/NZS 2161.8:2002
Occupational protective gloves
Part 8: Protection against ionizing radiation and radioactive contamination

RECONFIRMATION NOTICE

Technical Committee SF-023 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.

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NOTES

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF-023, Occupational Protective Gloves. It is identical with and has been reproduced from EN 421:1994, *Protective gloves against ionizing radiation and radioactive contamination.*

The objective of Part 8 is to provide users and manufacturers with requirements for gloves intended to provide protection against ionizing radiation and radioactive contamination.

Guidance for the selection, care and use of occupational protective gloves is provided in Part 1 of this series of Standards.

As this Standard is reproduced from a European Standard, the following applies:

(a) Its number appears on the cover and title page while the European Standard number appears only on the cover.

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

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

References to international and European Standards should be replaced by equivalent Australian, New Zealand or Australian/New Zealand Standards, as follows:

Reference to International Standard or other publication		*Australian/New Zealand Standard*	
EN		AS/NZS	
374	Protective gloves against chemicals and micro-organisms	—	
374-1	Part 1: Terminology and performance requirements	—	
374-2	Part 2: Determination of resistance to penetration	—	
374-3	Part 3: Determination of resistance to permeation by chemicals	—	
388	Protective gloves and mechanical risks	2161	Occupational protective gloves
		2161.3	Part 3: Protection against mechanical risks
420	General requirements for gloves	2161.2	Part 2: General requirements
ISO			
1431	Rubber, vulcanized or thermoplastic — Resistance to ozone cracking	—	
1431-1	Part 1: Static strain test	—	
4648	Rubber, vulcanized or thermoplastic — Determination of dimensions of test pieces and products for test purposes	—	

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Occupational protective gloves

Part 8:

Protection against ionizing radiation and radioactive contamination

Foreword

This European Standard was prepared by CEN/TC 162 'Protective clothing including hand and arm protection and lifejackets' of which the secretariat is held by DIN.

This European Standard has been prepared under a mandate given to CEN by the Commission of the European Communities and the European Free Trade Association, and supports essential requirements of EC Directive(s).

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 1994, and conflicting national standards shall be withdrawn at the latest by October 1994.

1 Scope

This standard specifies requirements and test methods for gloves to protect against ionizing radiation and radioactive contamination. The standard is applicable to gloves offering protection to the hand and various parts of the arm and shoulder. It also applies to gloves to be mounted in permanent containment enclosures.

2 Normative references

This European Standard incorporates by dated and undated references, provisions for other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 374–1	*Protective gloves against chemicals and micro organisms — Part 1: Terminology and performance requirements*
EN 374-2	*Protective gloves against chemicals and micro organisms — Part 2: Determination of resistance to penetration*
EN 374-3	*Protective gloves against chemicals and micro organisms — Part 3: Determination of resistance to permeation by chemicals*
EN 388	*Protective gloves against mechanical risks*
EN 420	*General requirements for gloves*
ISO 1431–1 : 1989	*Rubber, vulcanized or thermoplastic — Resistance to ozone cracking – Part 1: Static strain test*
ISO 4648	*Rubber, vulcanized or thermoplastic — Determination of dimensions of test pieces and products for test purposes*

3 Definitions

For the purposes of this standard, the following definitions apply:

3.1 irradiation

Exposure of a living being or matter to ionizing radiation by external sources (X, Alpha, Beta, Gamma or Neutron radiations).

3.2 Radioactive contamination

Presence of radioactive substances in or on a material or in a place where they are undesirable or could be harmful.

3.3 Water vapour permeability

Weight of water vapour in grams transmitted though a material per square metre per 24 h time, per millimetre thickness under specified conditions of temperature and humidity ($g \cdot m^{-2} \cdot d^{-1} \cdot mm^{-1}$).

4 Design principles

4.1 General principles

The general principles given in EN 420 apply in this case with the following specific additions.

4.2 Protective glove material

Any material or combination of materials used in a glove for the purpose of isolating the user from direct contact with the irradiation or radioactive contamination.

NOTE: For choice of material see references contained in the bibliography.

4.3 Construction of glove

The glove may be constructed from a single or multiple material layers. The choice of material is defined by the end use requirements.

In the case of protection against external ionizing radiation the glove may contain lead (PbO, Pb_3O_4) or other heavy metallic elements to act as attenuation medium in one or more of the layers. Metallic element distribution may be uniform or designed in agreement by manufacturer and user. Normally the metallic element used is lead.