

AS/NZS 2161.2:2020



Australian/New Zealand Standard™

# Occupational protective gloves

Part 2: General requirements and test methods (ISO 21420:2020, MOD)



currently in review, click buy full version

AS/NZS 2161.2:2020

This Joint Australian/New Zealand Standard™ was prepared by Joint Technical Committee SF-053, Protective Clothing. It was approved on behalf of the Council of Standards Australia on 1 October 2020 and by the New Zealand Standards Approval Board on 7 October 2020.

This Standard was published on 11 December 2020.

The following are represented on Committee SF-053:

- 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)
- Department of Defence (Australian Government)
- NCSA Foundation
- New Zealand Road Safety Manufacturers Association
- United Firefighters Union of Australia
- University of Otago New Zealand
- VicLab (Testing Interests Australia)

This Standard was issued in draft form for comment as DR AS/NZS 2161.2:2020

#### **Keeping Standards up-to-date**

Ensure you have the latest versions of our publications and keep up-to-date about Amendments, Rulings, Withdrawals, and new projects by visiting:

[www.standards.org.au](http://www.standards.org.au)

[www.standards.govt.nz](http://www.standards.govt.nz)

ISBN 978 1 76113 011 3

Australian/New Zealand Standard™

# Occupational protective gloves

**Part 2: General requirements and test methods  
(ISO 21420:2020, MOD)**

First published in Australia as part of AS Z4—1952.  
Revised and redesignated as AS 2161—1978.  
First published in New Zealand as part of NZS 1988:1965.  
Revised and redesignated as NZS 5812:1982.  
AS 2161—1987 and NZS 5812:1982 jointly revised, amalgamated and redesignated in  
part as AS/NZS 2161.2:1998.  
Previous edition 2005.  
Third edition AS/NZS 2161.2:2020.

## **COPYRIGHT**

© ISO 2020 — All rights reserved  
© Standards Australia Limited/the Crown in right of New Zealand, administered by the New  
Zealand Standards Executive 2020

All rights are reserved. No part of this work may be reproduced or copied in any form  
or by any means, electronic or mechanical, including photocopying, without the written  
permission of the publisher, unless otherwise permitted under the Copyright Act 1968 (Cth)  
or the Copyright Act 1994 (New Zealand).

## Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF-053, Protective clothing to supersede AS/NZS 2161.2:2005.

The objective of this document is to specify the general requirements and relevant test procedures for glove design and construction, innocuousness, comfort and efficiency, as well as the marking and information supplied by the manufacturer applicable to all protective gloves. Gloves and hand protectors such as mittens, pot holders and arm protection are covered by this document.

This document may also apply to arm protectors and gloves permanently incorporated in containment enclosures.

This document does not address the protective properties of gloves and therefore is not used alone but only in combination with the appropriate specific standard(s). A non-exhaustive list of those standards is given in the Bibliography.

This document is an adoption with national modifications, and has been reproduced from, ISO 21420:2020, *Protective gloves — General requirements and test methods*.

The modifications are additional requirements and are set out in [Appendix ZZ](#), which has been added at the end of the source text.

[Appendix ZZ](#) lists the variations to ISO 21420:2020 for the application of this document in Australia and New Zealand.

As this document has been reproduced from an International Standard, a full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

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

# Contents

Preface .....	ii
Foreword .....	v
Introduction .....	vi
<b>1 Scope .....</b>	<b>1</b>
<b>2 Normative references .....</b>	<b>1</b>
<b>3 Terms and definitions .....</b>	<b>2</b>
<b>4 General requirements .....</b>	<b>3</b>
4.1 Glove design and construction — General .....	3
4.2 Innocuousness of protective gloves .....	3
4.3 Cleaning .....	4
4.4 Additional properties .....	5
4.4.1 Electrostatic properties .....	5
<b>5 Comfort and efficiency .....</b>	<b>5</b>
5.1 Sizing and measurement of gloves .....	5
5.2 Dexterity .....	5
5.3 Breathability and comfort .....	6
5.3.1 Water vapour transmission .....	6
5.3.2 Water vapour absorption .....	6
<b>6 Test procedures .....</b>	<b>6</b>
6.1 Measurement of glove length .....	6
6.1.1 Procedure .....	6
6.2 Test method for determining gloved finger dexterity .....	7
6.2.1 Number and condition of specimens .....	7
6.2.2 Apparatus required .....	7
6.2.3 Test procedure .....	7
6.2.4 Test result .....	8
6.2.5 Test report .....	8
6.3 Test method for determination of water vapour behaviour .....	8
6.3.1 Leather materials .....	8
6.3.2 Textile materials .....	8
6.4 Test method for the determination of water vapour absorption of leather materials .....	8
6.4.1 Sampling .....	8
6.4.2 Test procedure .....	8
6.5 Test report .....	8
<b>7 Marking and information .....</b>	<b>9</b>
7.1 General .....	9
7.2 Marking .....	9
7.2.1 Glove marking .....	9
7.2.2 Marking of packaging .....	10
7.3 Information supplied by the manufacturer .....	10
7.4 Information to be supplied on request .....	12
<b>Annex A (informative) Definition of "For minimal risks only" .....</b>	<b>13</b>
<b>Annex B (informative) Sizes and measurement of hands .....</b>	<b>14</b>
<b>Annex C (normative) Pictograms .....</b>	<b>16</b>
<b>Annex D (informative) Test results — Uncertainty of measurement .....</b>	<b>18</b>
<b>Annex E (informative) Flow chart for considering acceptability of materials in protective gloves .....</b>	<b>19</b>
<b>Annex F (informative) Environmental aspects .....</b>	<b>21</b>

<b>Annex G</b>	(informative) <b>Substances, or families of substances, which are known allergens that may be found in gloves</b> .....	<b>22</b>
<b>Bibliography</b> .....		<b>23</b>
<b>Appendix ZZ</b>	(normative) <b>Variations to ISO 21420:2020 for Australia and New Zealand</b> .....	<b>25</b>

Currently in preview, click buy full version

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

ISO 21420 was prepared by Technical Committee ISO/TC 94, *Personal safety — Protective clothing and personal protective equipment*, Subcommittee SC 3, *Protective clothing*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 162, *Protective clothing including hand and arm protection and life jackets*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

This document is a reference standard to be referred to as appropriate by the specific standards relevant or applicable to protective gloves.

Currently in preview, click buy full version

# Australian/New Zealand Standard

## Occupational protective gloves

### Part 2: General requirements and test methods (ISO 21420:2020, MOD)

#### 1 Scope

This document specifies the general requirements and relevant test procedures for glove design and construction, innocuousness, comfort and efficiency, as well as the marking and information supplied by the manufacturer applicable to all protective gloves.

It can also apply to arm protectors and gloves permanently incorporated in containment enclosures.

Gloves and hand protectors such as mittens, pot holders and arm protection are covered by this document.

This document does not address the protective properties of gloves and therefore is not used alone but only in combination with the appropriate specific standard(s). A non-exhaustive list of these standards is given in the Bibliography.

#### 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. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3071, *Textiles — Determination of pH of aqueous extract*

ISO 3758, *Textiles — Care labelling code using symbols*

ISO 4045:2018, *Leather — Chemical tests — Determination of pH and difference figure*

ISO 7000:2014, *Graphical symbols for use on equipment — Registered symbols*

ISO 11092, *Textiles — Physiological effects — Measurement of thermal and water-vapour resistance under steady-state conditions (sweating guarded-hotplate test)*

ISO 14268, *Leather — Physical and mechanical tests — Determination of water vapour permeability*

ISO 14362-1, *Textiles — Methods for determination of certain aromatic amines derived from azo colorants — Part 1: Detection of the use of certain azo colorants accessible with and without extracting the fibres*

ISO/TS 16190, *Footwear — Critical substances potentially present in footwear and footwear components — Test method to quantitatively determine polycyclic aromatic hydrocarbons (PAH) in footwear materials*

ISO 17075-1, *Leather — Chemical determination of chromium(VI) content in leather — Part 1: Colorimetric method*

ISO 17075-2, *Leather — Chemical determination of chromium(VI) content in leather — Part 2: Chromatographic method*

ISO 17234-1, *Leather — Chemical tests for the determination of certain azo colorants in dyed leathers — Part 1: Determination of certain aromatic amines derived from azo colorants*

ISO 20344:2011, *Personal protective equipment — Test methods for footwear*

ISO 23388, *Protective gloves against mechanical risks*