
Protective gloves — General requirements and test methods

Gants de protection — Exigences générales et méthodes d'essai

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Published in Switzerland

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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).

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).

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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.

ISO 21420 was prepared by Technical Committee ISO/TC 94, *Personal safety — Protective clothing and personal protective equipment*, Subcommittee SC 13, *Protective clothing*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 162, *Protective clothing including hand and arm protection and lifejackets*, 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.

Introduction

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

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Protective gloves — General requirements and test methods

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*

EN 1811+A1:2015, *Reference test method for release of nickel from post assemblies which are inserted into pierced parts of the human body and articles intended to come into direct and prolonged contact with the skin*

EN 16350, *Protective gloves — Electrostatic properties*

EN 16778, *Protective gloves — Determination of dimethylformamide in gloves*

IEC 60417:2002, *Graphical symbols for use on equipment*

3 Terms and definitions

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

3.1

dexterity

manipulative ability to perform a task with the hands

3.2

glove

personal protective equipment (PPE) which protects the hand or part of the hand against hazards. It can additionally cover part of the forearm and arm

3.3

glove palm

part of the glove which covers the palm of the hand, i.e. from the wrist to the base of the fingers

3.4

glove back

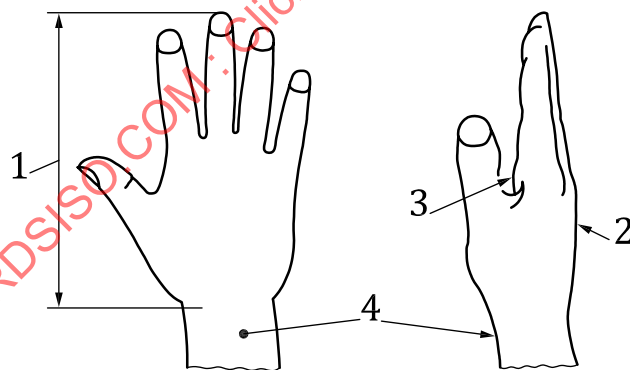
part of the glove which covers the back of the hand, i.e. from the wrist to the base of the fingers

3.5

hand

end part of the body beyond the wrist, including palm, fingers and the thumb

Note 1 to entry: See [Figure 1](#).



Key

- 1 hand
- 2 back

- 3 palm
- 4 wrist

Figure 1 — Definitions of hand, palm, back and wrist

3.6

hazard

potential source of injury or damage to the health of people

3.7

level of performance

number or letter that designates a particular category or range of performance by which the results of testing can be graded

Note 1 to entry: The level of performance is determined by the result of the corresponding test as described in the specific standards referred to in the Bibliography.

Note 2 to entry: A high level number or letter corresponds to a high level of performance.

Note 3 to entry: Levels of performance are based upon the results of laboratory tests, which do not necessarily reflect actual conditions in the workplace.

3.8

multilayer gloves

gloves containing more than one layer with some level of permanent connection between the layers.

4 General requirements

4.1 Glove design and construction — General

The protective glove shall be designed and manufactured so that in the foreseeable conditions of use, the wearer can perform the activity as normally as possible with an appropriate protection. This document along with the appropriate specific standards shall be used to verify this adequation.

If required in the relevant specific standard (for example ISO 16073:2011, 5.7.3), the glove shall be designed to minimize the donning and doffing time.

For reusable multilayer gloves, the gloves shall be able to be doffed without separation of the layers of the fingers. When the glove construction includes seams, the material and strength of the seams shall be such that the overall performance of the glove is not significantly decreased as required in the relevant specific standards.

Test methods and requirements are stated in the specific standards listed in the Bibliography. The number of samples shall be as stated in the specific standard. If the standard requests at least x samples then x samples shall be tested. For uncertainties of measurement, see [Annex D](#).

4.2 Innocuousness of protective gloves

Protective gloves shall not adversely affect the health or hygiene of the user. The materials should not, in the foreseeable conditions of normal use, release substances generally known to be toxic, carcinogenic, mutagenic, allergenic, toxic to reproduction, corrosive, sensitizing or irritating.

NOTE 1 Information on the classification and identification of hazardous substances can be found, e.g. in References [22] and [27].

NOTE 2 Guidance on how to consider acceptability of materials in protective gloves is given in the flow chart in [Annex E](#).

Materials should be selected to minimize the environmental impact of the production and disposal of protective gloves (see also [Annex F](#)).

The examination shall determine whether the claim that the materials are suitable for use in the protective gloves is justified. Particular attention shall be paid to the presence of plasticisers, unreacted components, heavy metals, impurities and the chemical identity of pigments and dyes.

- a) Chromium VI content in gloves containing leather shall be tested according to ISO 17075-1 or ISO 17075-2 and shall be less than 3,0 mg/kg of leather.

Depending on the measured Chromium VI content, the test report shall indicate:

- that the Chromium VI content is less than 3,0 mg/kg, or
- that Chromium VI content is equal to or above 3,0 mg/kg and the value that has been determined in mg/kg.

If the glove includes different types of leather, whether in contact with the skin or not, each leather type shall be tested separately and comply with the above requirement.

- b) All metallic materials which could come into prolonged contact with the skin (for example studs, fittings) shall have a release of nickel of less than 0,5 µg/cm² per week. The method of test shall be in accordance with EN 1811+A1:2015.
- c) All glove materials shall have a value greater than pH 3,5 and less than pH 9,5. The test method for leather shall be in accordance with ISO 4045 and for other materials in accordance with ISO 3071.

The following additional requirements shall apply:

- the test piece shall be cut out from the palm area of the glove. If other parts of the glove are made of different materials, then each material shall be tested separately and comply with the above requirements;
- if gloves are made of more than one layer, all layers shall be tested separately;
- ISO 4045:2018, 8.4, does not apply.
- d) Azo colorants which release carcinogenic amines listed in ISO 14362-1 for all textile materials and ISO 17234-1 for all leathers shall not be detectable by the method in these standards.
- e) Dimethylformamide (DMFa) in gloves containing PU shall not exceed 1 000 mg/kg (0,1 % weight/weight). The test method shall be in accordance with EN 16778.
- f) Polycyclic aromatic hydrocarbons (PAHs) as listed in [Table 1](#), shall not exceed 1 mg/kg (0,000 1 % by mass of this component), for the rubber or plastic materials intended to come in direct contact with the skin. The test method shall be in accordance with ISO/TS 16190.

Table 1 — List of PAHs

	PAHs designation	CAS No
1	Benzo[a]pyrene (BaP)	50-32-8
2	Benzo[e]pyrene (BeP)	192-97-2
3	Benzo[a]anthracene (BaA)	56-55-3
4	Chrysene (CHR)	218-01-9
5	Benzo[b]fluoranthene (BbFA)	205-99-2
6	Benzo[j]fluoranthene (BjFA)	205-82-3
7	Benzo[k]fluoranthene (BkFA)	207-08-9
8	Dibenzo[a,h]anthracene (DBAhA)	53-70-3

4.3 Cleaning

If not otherwise specified, all tests required by this document as well as in the specific standards for protective gloves shall be performed on unused gloves.

If care instructions are provided (see [7.3.14](#)), the relevant performance-related tests of this document and the specific standards (see Bibliography) shall be performed on the gloves, before and after they have been subjected to the maximum recommended number of cleaning cycles using the claimed cleaning instructions. The levels of performance are given by the lowest results obtained before and after cleaning.

The warning on tear resistance gloves in close proximity of rotating machinery shall be given on the basis of the highest tear performance level according to ISO 23388 whether tested before or after cleaning. In case of rotating machinery, the glove should tear prior to the hand getting caught in the moving parts of the machine.

4.4 Additional properties

4.4.1 Electrostatic properties

For protective gloves that are intended to be worn in areas where flammable or explosive risks exist or might be present, the electrostatic properties shall be tested according to the test method described in EN 16350.

For gloves meeting the requirement in EN 16350, the corresponding pictogram given in [Table C.1](#) can be used for marking. Reference to EN 16350 shall be affixed to it as shown in [Figure 2](#).

In the case that surface electrostatic properties or charge decay need to be determined as additional parameters, EN 1149-1 or EN 1149-3 should be used to determine further electrostatic properties of the gloves. The corresponding test results may be reported in the information supplied by the manufacturer but cannot be used to apply the pictogram.



Figure 2 — Example of marking for electrostatic properties of gloves according to EN 16350 and ISO 7000-2415

5 Comfort and efficiency

5.1 Sizing and measurement of gloves

Sizes of gloves are defined with respect to the sizes of the hands they are to fit. See [Figure 1](#) and [Annex B](#).

The hand sizing system should be based on hand circumference and hand length as defined in [Annex B](#). If a different sizing system from the one in [Annex B](#) is used, it shall be explained to the user.

If required for specific use (for example, gloves for welders and firefighters), the minimum glove length shall be defined in the relevant specific standards and measured according to [6.1](#).

5.2 Dexterity

A glove should allow as much dexterity as possible given its purpose, as required in the appropriate specific standard. Dexterity is related to numerous factors e.g. thickness of glove material, its elasticity, its deformability.

If required in specific use (for example gloves for welders), finger dexterity shall be tested according to the test method in [6.2](#).

The performances shall be graded according to [Table 2](#) hereafter. If no pin can be picked up, then the level is 0.

Table 2 — Levels of performance — Finger dexterity test

Level of performance	Smallest diameter of pin fulfilling test conditions
	mm
1	11,0
2	9,5
3	8,0
4	6,5
5	5,0

5.3 Breathability and comfort

5.3.1 Water vapour transmission

Where practicable, protective gloves shall allow water vapour transmission. All materials shall fulfil the following requirements:

If this property is claimed for a leather glove, it shall have a water vapour transmission of at least 5 mg/(cm²·h) when tested according to [6.3.1](#).

If this property is claimed for a textile glove, it shall have a water vapour resistance less than or equal to 30 m²·Pa/W when tested according to [6.3.2](#).

5.3.2 Water vapour absorption

Where the protection characteristics of the glove inhibit or exclude water vapour transmission, when practicable, the gloves shall be designed to reduce the perspiration absorption as much as possible.

If this property is claimed for a leather glove, it shall have a water vapour absorption of at least 8 mg/cm² for 8 h when tested according to [6.4.2](#).

6 Test procedures

6.1 Measurement of glove length

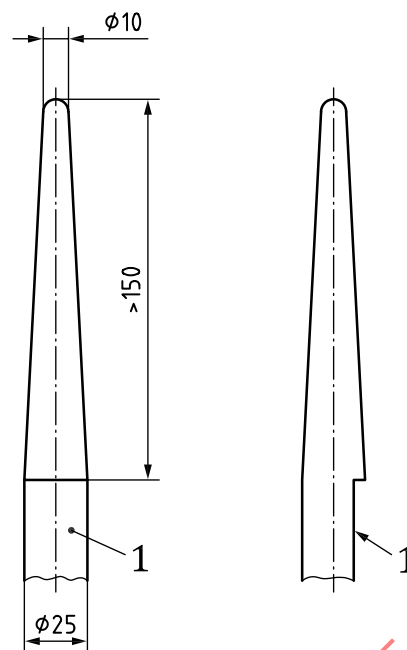
6.1.1 Procedure

Before testing, samples shall be conditioned for at least 24 h at 23 ± 2 °C and 50 ± 5 % relative humidity and testing shall be started within 10 min after removal from conditioning.

For each size, 3 gloves shall be tested. Measure the length by freely suspending the glove with the middle finger on a vertical graduated ruler having a rounded tip so as to fit the shape of the finger tip of the glove. Remove wrinkles and folds without stretching the glove. Turn the glove around the pin and record the minimum measured length to the nearest millimetre.

NOTE 1 See typical shape and dimensions for a vertical graduated ruler in [Figure 3](#).

Dimensions in millimetres

**Key**

- 1 incorporated ruler on flattened surface

Figure 3 — Example of top part of a vertical graduated ruler

NOTE 2 For greater ease of measurement, the ruler can be angled backwards slightly so that the glove is in contact with the ruler.

For heavy, stiff gloves, or gloves with thick seams that cannot be measured on the graduated ruler, the glove shall be laid on a table and measured over its back from the tip of the middle finger to cuff edge using a flexible measuring tape.

6.2 Test method for determining gloved finger dexterity

6.2.1 Number and condition of specimens

Before testing, samples shall be conditioned for at least 24 h at 23 ± 2 °C and 50 ± 5 % relative humidity and testing shall be started within 10 minutes after removal from conditioning.

Four gloves of either left or right hand shall be tested. The specimens are the entire gloves and shall be taken for test in the new (as made) condition. They shall not be softened by any special treatment, for example tapping with a mallet or squeezing between rollers.

6.2.2 Apparatus required

Five solid, centreless ground stainless steel test pins are required, each $40 \text{ mm} \pm 1 \text{ mm}$ long and of diameter respectively of 5 mm, 6,5 mm, 8 mm, 9,5 mm, 11 mm (diameter tolerance $\pm 0,2 \text{ mm}$).

6.2.3 Test procedure

The pins shall be placed on a flat surface, e.g. a table top, and a trained operator wearing gloves of adequate size shall pick up the appropriate pin by its circumference between his gloved forefinger and thumb without any other means of assistance. The pin shall be lifted up until it does not touch the initial surface, then dropped back after at least 5 s. The operator shall pick up each pin three times consecutively, without undue fumbling, within 30 s.

6.2.4 Test result

The result corresponds to the smallest diameter of the pin that can be picked up according to the procedure in 6.2.3. The test result is the smallest performance level obtained on the 4 gloves.

6.2.5 Test report

The test report shall contain the information in 6.5. The performance level shall be given in accordance with Table 2.

6.3 Test method for determination of water vapour behaviour

6.3.1 Leather materials

6.3.1.1 Sampling

Only the main leathers (excluding e.g. reinforcements) used in glove palm and glove back shall be tested.

If the materials are different in palm and back, both sides shall be tested.

In case of multilayer construction, the textile lining materials shall be tested and reported separately according to 6.3.2.

6.3.1.2 Test procedure

The test shall be performed in accordance with ISO 14268.

6.3.2 Textile materials

6.3.2.1 Sampling

A sample of material as required in ISO 11092 shall be tested, provided the sample material and construction are identical with that of the glove.

If the materials are different in palm and back, both sides shall be tested.

6.3.2.2 Test procedure

The test shall be performed in accordance with ISO 11092.

6.4 Test method for the determination of water vapour absorption of leather materials

6.4.1 Sampling

Only the main leathers (excluding e.g. reinforcements) used in glove palm and glove back shall be tested.

In case of multilayer construction, the textile lining materials shall be removed before testing.

6.4.2 Test procedure

The test shall be performed in accordance with ISO 20344:2011, 6.7.

6.5 Test report

The test report shall contain the following information:

- a) a reference to the clause of the relevant standard;

- b) atmosphere and conditioning;
- c) the reference of the sample;
- d) the test result according to the requirements of the relevant standard;
- e) any deviation from the test method;
- f) the performance level, if existing.

7 Marking and information

7.1 General

All information shall be precise and comprehensive.

7.2 Marking

7.2.1 Glove marking

7.2.1.1 Each protective glove shall be marked with the following information:

- a) Name, trade mark or other means of identification of the manufacturer or the manufacturer's authorized representative;
- b) Glove designation (commercial name or code allowing the user to identify clearly the product within the manufacturer's/authorized representative's range);
- c) Size designation;
- d) Where the glove conforms to one or more specific standards (see Bibliography), the pictogram (s) shall be as specified in [Annex C](#). Each pictogram shall be accompanied by the reference of the applicable specific standard and performance levels (see [7.3.5](#)), which shall always be in the same fixed sequence as defined in the corresponding standard;
- e) Date of manufacturing, at least the month and year (for example 2016/11), or any mean ensuring the manufacturing batch traceability;
- f) If applicable, the obsolescence date, at least the month and year (for example 2016/11), behind the hour glass pictogram as shown in [Annex C](#).

7.2.1.2 The marking shall be affixed so as to be visible and legible throughout the foreseeable useful life of the glove. Marks or inscriptions which could be confused with the above marks shall not be affixed to the glove.

7.2.1.3 If marking on the glove is not possible given the characteristics of the product, the marking shall be affixed to the packaging or any document supplied with the glove.

7.2.1.4 A pictogram shall only be used when the glove meets at least the minimum requirement of the relevant specific standard.

NOTE The marking on the glove including pictograms is not sufficient in itself to convey comprehensive information about protection to the end-user. It is considered only along with the information supplied by the manufacturer described in [7.3](#).

7.2.2 Marking of packaging

Each packaging enclosure that immediately contains the gloves shall be clearly marked with the following:

- a) Name and full address of the manufacturer or the manufacturer's authorized representative;
- b) The information required in [7.2.1.1](#) b) and c);
- c) Reference to where the information required in [7.3](#) may be obtained;
- d) Where the glove is of simple design intended to protect the wearer against only those hazards listed in [Annex A](#), the words "For minimal risks only" or an equivalent expression shall be printed.
- e) The pictogram(s) appropriate to the specific standard, see [Annex C](#), when the glove conforms to this specific standard (see Bibliography). Each pictogram shall be accompanied by the performance levels, which shall always be in the same fixed sequence as defined in the relevant specific standard, and the reference to the applicable standard. If additional pictograms are used, they shall be explained in the information supplied by the manufacturer ([7.3](#));
- f) Where applicable, information required in [7.3.6](#);
- g) If applicable, the obsolescence date, at least the month and year (for example 2016/11), behind the hour glass pictogram as shown in [Annex C](#).

7.3 Information supplied by the manufacturer

The following minimum information shall be supplied when the protective glove is placed on the market and shall be maintained available.

7.3.1 Name and full address of the manufacturer or authorized representative.

7.3.2 Glove designation as per [7.2.1.1](#) b).

7.3.3 Information on the available size range and where applicable, information required in [5.1](#).

7.3.4 The intended use of the glove and reference to the relevant specific standard(s) and publication year (see Bibliography).

7.3.5 Where applicable as per [7.2.1.1](#) d) and [7.2.2](#) e), pictogram(s) indicating categories of hazard followed as applicable by the performance levels.

0: indicates that the glove falls below the minimum performance level for the given individual hazard.

X: indicates that the glove has not been tested or the test method appears not to be suitable for the glove design or material.

Furthermore, a basic explanation shall be given to assist comprehension of the relevant performance levels, and the standard(s) to which they refer shall be indicated. The reason(s) to use "X" shall be explained.

Example for protective gloves for use against mechanical risks according to ISO 23388 is given in [Figure 4](#).



Figure 4 — Protection against mechanical risks (ISO 7000-2490)

Performance level shall be in the same order as given within the relevant specific standard. They may be positioned anywhere next to the pictogram provided that they are in clear relation with it.

7.3.6 When protection is limited to part of the hand only, this shall be mentioned.

7.3.7 If appropriate, warnings against problems likely to be encountered or limitation of use shall be mentioned. As an example, a warning could be given about the use of tear resistant gloves used in close proximity of rotating machinery.

7.3.8 If the materials constituting the gloves are known to lose their performances during recommended storage, information shall be given to ensure that the storage will not change the glove characteristics significantly.

7.3.9 If it is known that the design performance of the glove may be significantly affected by ageing, the necessary information to establish a reasonable obsolescence date as requested in [7.2.1.1 f\)](#) shall be given.

7.3.10 A warning for gloves containing any natural rubber, such as: “the glove contains natural rubber which may cause allergic reactions”.

7.3.11 Instructions relevant to donning, doffing, adjusting the gloves, preserving comfort and hygiene of the hand, protection from contamination of the hand, and where relevant information concerning combination with other forms of PPE.

7.3.12 Any relevant instruction to check the integrity of the glove before using it (for example check that the glove does not present holes, cracks, tears, colour change..., and discard any glove presenting such defects).

7.3.13 Storage instructions.

7.3.14 If cleaning according to [4.3](#) is claimed, care symbols according to ISO 3758 or explanations and an acceptable number of cleaning cycles, shall be provided.

If cleaning is not recommended, it shall be indicated that the glove is not washable. This excludes single-use gloves.

7.3.15 If relevant, test results according to [4.4](#) along with reference of corresponding standard, atmosphere for testing, area of the glove tested and test method/electrode used and the voltage applied as per the relevant standard. Moreover, a written warning shall be provided to advise that all clothing and shoes worn with this type of glove shall also be designed taking the electrostatic risk into account.

7.3.16 Reference to accessories and spare parts, if relevant, for example connection systems between sleeve and glove.

7.3.17 Type of packaging suitable for transport, if relevant.

7.4 Information to be supplied on request

A list of the substances contained in the glove which are known to cause allergies, see [Annex G](#), shall be supplied on request, other than natural rubber ([7.3.10](#)).

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Annex A

(informative)

Definition of "For minimal risks only"

This category of risk includes exclusively the following minimal risks:

- superficial mechanical injury;

NOTE Superficial injuries are for example bruises, sticks from plants and scratches resulting from bumping into fixed obstacles and gardening work and that do not need medical attention.

- contact with cleaning materials of weak action or prolonged contact with water;
- contact with hot surface not exceeding 50 °C;
- atmospheric conditions that are not of an extreme nature.

Annex B (informative)

Sizes and measurement of hands

B.1 Sizes of the hand

Two primary measurements define the hand:

- hand circumference;
- hand length (distance between the wrist and the tip of the middle finger).

Sizes of hands are defined in [Table B.1](#) according to anthropomorphic surveys conducted in different countries. Half sizes can be derived by interpolation between full sizes. Any smaller and larger sizes can be derived by extrapolation of the data in [Table B.1](#). The values of hand circumference and hand length in [Table B.1](#) are informative.

Table B.1 — Sizes of hands

Hand size ^a	Hand circumference	Hand length
	mm	mm
4	101	<160
5	127	<160
6	152	160
7	178	171
8	203	182
9	229	192
10	254	204
11	279	215
12	304	>215
13	329	>215

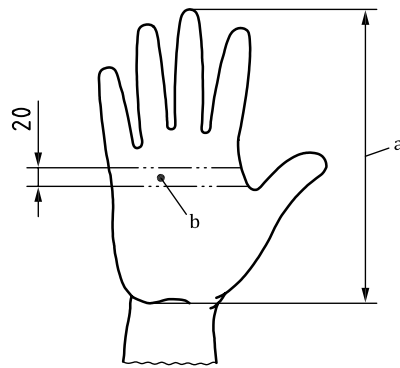
^a This code is a conventional designation of hand size corresponding to the hand circumference expressed in inches.

B.2 Measurement of the hand

The circumference of the hand is measured with a tape, 20 mm from the crotch between thumb and index finger (see [Figure B.1](#)).

Length of hand is as shown on [Figure B.1](#).

Dimensions in millimetres



- a Hand length.
- b Area where the hand circumference is measured.

Figure B.1 — Measurement of hand circumference and hand length

Annex C (normative)

Pictograms

Table C.1 — Pictograms

Pictogram	Meaning (e.g. category of hazard)	Pictogram	Meaning (e.g. category of hazard)
	Protection against mechanical hazards ISO 7000- 2490		Protection against chain saw ISO 7000- 2416
	Protection against cuts and stabs ISO 7000- 2483		Protection against cold ISO 7000- 2412
	Protection against heat without flame ISO 7000- 3652		Protection against heat and flame ISO 7000- 2417
	Protective equipment for fire fighters ISO 7000- 2418		Protection against the thermal effect of the electric arc IEC 60417- 6353
	Suitable for live working IEC 60417- 5216		Protection against stat- ic electricity ISO 7000- 2415

Table C.1 (continued)

Pictogram	Meaning (e.g. category of hazard)	Pictogram	Meaning (e.g. category of hazard)
	Protection against chemicals ISO 7000-2414		Protection against agricultural pesticides ISO 7000-3126
	Protection against ionizing radiation ISO 7000-2809		Protection against radioactive contamination ISO 7000-2484
	Protection against micro-organism hazards ISO 7000-2491		
	Information ISO 7000-1641		Use by date (obsolescence) ISO 7000-2607
	Date of manufacture ISO 7000-2497		

Annex D **(informative)**

Test results — Uncertainty of measurement

For each of the required measurements performed in accordance with this document, a corresponding estimate of the uncertainty of measurement should be evaluated. One of the following approaches shall be used:

- a statistical method, for example as given in ISO 5725-2;
- a mathematical method, for example as given ISO/IEC Guide 98-3;
- uncertainty and conformity assessment as given in ISO/IEC Guide 98-4;
- JCGM 100:2008.

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Annex E (informative)

Flow chart for considering acceptability of materials in protective gloves

The materials should not, in the foreseeable conditions of normal use, release substances generally known to be toxic, carcinogenic, mutagenic, allergenic, toxic to reproduction, corrosive, sensitizing or irritating.

NOTE 1 Information on the classification and identification of harmful substances can be found, e.g. in References [22] and [27] of the Bibliography.

The following list of documents is given for information and as examples of documents to be examined:

- Information supplied by the manufacturer could include evidence-based information confirming that the product does not contain any substances at levels that are known or suspected to affect user hygiene or health adversely,
- Materials specifications,
- Safety data sheets relating to the materials,
- Information relating to the suitability of the materials for use with food, in medical devices, or other relevant applications,
- Information relating to toxicological, allergenic, carcinogenic, toxic to reproduction or mutagenic investigations on the materials,
- Information relating to ecotoxicological and other environmental investigations on the materials.