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Protective clothing - Protection against rain (ISO 24232:2024)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 02/26

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EUROPEAN STANDARD

EN ISO 24232

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

**Protective clothing - Protection against rain (ISO
24232:2024)**Habillement de protection - Protection contre la pluie
(ISO 24232:2024)Schutzkleidung - Schutz gegen Regen (ISO
24232:2024)

This European Standard was approved by CEN on 17 October 2024.

This European Standard was corrected and reissued by the CEN-CENELEC Management Centre on 26 November 2025.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

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European foreword

This document (EN ISO 24232:2025) has been prepared by Technical Committee ISO/TC 94 "Personal safety -- Personal protective equipment" in collaboration with Technical Committee CEN/TC 162 "Protective clothing including hand and arm protection and lifejackets" the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by April 2026, and conflicting national standards shall be withdrawn at the latest by April 2026.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 343:2019.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 24232:2024 has been approved by CEN as EN ISO 24232:2025 without any modification.

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Annex ZA (informative)

Relationship between this European Standard and the essential requirements of Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/571 to provide one voluntary means of conforming to essential requirements of Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment.

Once this standard is cited in the Official Journal of the European Union under that Regulation (EU) 2016/425, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Regulation (EU) 2016/425 and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Regulation (EU) 2016/425

Essential Requirements (ERs) of Regulation (EU) 2016/425	Clause(s)/subclause(s) of this EN	Remarks/Notes
1.1.1 Ergonomics		Not covered
1.1.2.1 Optimum level of protection		Not covered
1.1.2.2 Classes of protection appropriate to different levels of risk		Not covered
1.2.1 Absence of risks and other 'inherent' nuisance factors	4.1.1, 4.2, 4.3, 4.7, 4.9	
1.2.1.1 Suitable constituent materials	4.1.2	
1.2.1.2 Satisfactory surface condition of all PPE parts in contact with the user	4.1.1	
1.2.1.3 Maximum permissible user impediment		Not covered
1.3.1 Adaptation of PPE to user morphology		Not covered
1.3.2 Lightness and strength	4.4, 4.5, 4.6, 4.8, 5.3.3, 5.3.4, 5.3.5	
1.3.3 Compatibility of different types of PPE intended for simultaneous use		Not covered
1.3.4 Protective clothing containing removable protectors		Not covered
1.4 Manufacturer's instructions and information	8	
2.1 PPE incorporating adjustment systems		Not covered

Essential Requirements (ERs) of Regulation (EU) 2016/425	Clause(s)/subclause(s) of this EN	Remarks/Notes
2.2 PPE enclosing the parts of the body to be protected		Not covered
2.3 PPE for the face, eyes and respiratory system		Not applicable
2.4 PPE subject to ageing	5.3.	
2.5 PPE which may be caught up during use		Not applicable
2.6 PPE for use in potentially explosive atmospheres		Not applicable
2.7 PPE intended for rapid intervention or to be put on or removed rapidly		Not applicable
2.8 PPE for intervention in very dangerous situations		Not applicable
2.9 PPE incorporating components which can be adjusted or removed by the user		Not covered
2.10 PPE for connection to complementary equipment external to the PPE		Not covered
2.11 PPE incorporating a fluid circulation system		Not applicable
2.12 PPE bearing one or more identification markings or indicators directly or indirectly relating to health and safety	7	
2.13 PPE capable of signalling the user's presence visually		Not applicable
2.14 Multi-risk PPE		Not applicable
3.1.1 Impact caused by falling or ejected objects and collisions of parts of the body with an obstacle		Not applicable
3.1.2.1 Prevention of falls due to slipping		Not applicable
3.1.2.2 Prevention of falls from a height		Not applicable
3.1.3 Mechanical vibration		Not applicable
3.2 Protection against static compression of a part of the body		Not applicable
3.3 Protection against mechanical injuries		Not applicable
3.4.1 Prevention of drowning		Not applicable
3.4.2 Buoyancy aids		Not applicable
3.5 Protection against the harmful effects of noise		Not applicable

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Essential Requirements (ERs) of Regulation (EU) 2016/425	Clause(s)/subclause(s) of this EN	Remarks/Notes
3.6.1 PPE constituent materials and other components		Not applicable
3.6.2 Complete PPE ready for use		Not applicable
3.7 Protection against cold		Not covered
3.7.1 PPE constituent materials and other components		Not covered
3.7.2 Complete PPE ready for use		Not covered
3.8.1 Insulating equipment		Not applicable
3.8.2 Conductive equipment		Not applicable
3.9.1 Non-ionising radiation		Not applicable
3.9.2.1 Protection against external radioactive contamination		Not applicable
3.9.2.2 Protection against external irradiation		Not applicable
3.10.1 Respiratory protection		Not applicable
3.10.2 Protection against cutaneous and ocular contact		Not applicable
3.11 Diving equipment		Not applicable

Table ZA.2 — Normative references from clause 2 of this document and their corresponding European publications

Column 1 Reference in Clause 2	Column 2 International Standard Edition	Column 3 Title	Column 4 Corresponding European Standard Edition
ISO 811:2018	ISO 811:2018	Textiles — Determination of resistance to water penetration — Hydrostatic pressure test	EN ISO 811:2018
ISO 1421:2016	ISO 1421:2016	Rubber- or plastics-coated fabrics — Determination of tensile strength and elongation at break	EN ISO 1421:2016
ISO 1817:2022	ISO 1817:2022	Rubber, vulcanized or thermoplastic — Determination of the effect of liquids	None For applicable standard edition see Column 2
ISO 4674-1:2016	ISO 4674-1:2016	Rubber- or plastics-coated fabrics — Determination of	EN ISO 4674-1:2016

		tear resistance — Part 1: Constant rate of tear methods	
ISO 7854:1995	ISO 7854:1995	Rubber- or plastics-coated fabrics — Determination of resistance to damage by flexing	EN ISO 7854:1997
ISO 11092:2014	ISO 11092:2014	Textiles — Physiological effects — Measurement of thermal and water-vapour resistance under steady- state conditions (sweating guarded-hotplate test)	EN ISO 11092:2014
ISO 12947- 1:1998	ISO 12947-1:1998	Textiles — Determination of the abrasion resistance of fabrics by the Martindale method — Part 1: Martindale abrasion testing apparatus	EN ISO 12947-1:1998
ISO 12947- 2:2016	ISO 12947-2:2016	Textiles — Determination of the abrasion resistance of fabrics by the Martindale method — Part 2: Determination of specimen breakdown	EN ISO 12947-2:2016
ISO 13688:2013	ISO 13688:2013	Protective clothing — General requirements	EN ISO 13688:2013
ISO 13688:2013	ISO 13688:2013/Amd 1:2021	Protective clothing — General requirements — Amendment 1	EN ISO 13688:2013/A1:2 021
ISO 13934- 1:2013	ISO 13934-1:2013	Textiles — Tensile properties of fabrics – Part 1: Determination of maximum force and elongation at maximum force using the strip method	EN ISO 13934-1:2013
ISO 13935- 2:2014	ISO 13935-2:2014	Textiles — Seam tensile properties of fabrics and made-up textile articles — Part 2: Determination of maximum force to seam rupture using the grab method	EN ISO 13935-2:2014
ISO 13938- 1:2019	ISO 13938-1:2019	Textiles — Bursting properties of fabrics — Part 1: Hydraulic method for determination of bursting	EN ISO 13938-1:2019

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		strength and bursting distension	
ISO 13938-2:2019	ISO 13938-2:2019	Textiles — Bursting properties of fabrics — Part 2: Pneumatic method for determination of bursting strength and bursting distension	EN ISO 13938-2:2019
ISO 23388:2018	ISO 23388:2018	Protective gloves against mechanical risks	None For applicable standard edition see Column 2
ISO 24231:2024	ISO 24231:2024	Protective clothing — Protection against rain — Test method for ready-made garments against high energy droplets from above	EN ISO 24231:2024

The documents listed in the Column 1 of Table ZA.2, in whole or in part, are normatively referenced in this document, i.e. are indispensable for its application. The achievement of the presumption of conformity is subject to the application of the edition of Standards as listed in Column 4 or, if no European Standard Edition exists, the International Standard Edition given in Column 2 of Table ZA.2.

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.



International Standard

ISO 24232

Protective clothing — Protection against rain

Habillement de protection — Protection contre la pluie

**First edition
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ISO 24232:2024(en)



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ISO 24232:2024(en)**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 document 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).

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For an explanation of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 94, *Personal safety — 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.

ISO 24232:2024(en)**Introduction**

In this document the measured properties of materials and seams of protective garments and their subsequent classification are intended to ensure an adequate protection level. Water proofness and water vapour resistance are the essential properties tested and marked on the label.

Water proofness is the most important property and it is measured on material of the outer garment layer. Tests are made on pretreated fabric samples and on parts with seams. A test method for an optional readymade garment test after cleaning is described (rain tower test).

Some waterproof materials are impermeable to water vapour transmission. However other materials on the market combine water proofness with water vapour permeability. This property expressed by low water vapour resistance enhances sweat evaporation and significantly contribute to body cooling. This is valuable, because it contributes to better comfort and less physiological strain and prolongs the wearing time in certain climatic conditions (see [Annex A](#)).

Protective clothing — Protection against rain

1 Scope

This document specifies requirements and test methods for the performance of materials and readymade garments for protection against the effects of precipitation (e.g. rain, snowflakes), fog and ground humidity. Garments for protection against other effects than precipitation (e.g. water splashes, waves) are excluded from this document.

The protective effects and requirements of footwear, gloves and separate headwear are excluded from the scope of this document.

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 811:2018, *Textiles — Determination of resistance to water penetration — Hydrostatic pressure test*

ISO 1421:2016, *Rubber- or plastics-coated fabrics — Determination of tensile strength and elongation at break*

ISO 1817:2024, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

ISO 4674-1:2016, *Rubber- or plastics-coated fabrics — Determination of tear resistance — Part 1: Constant rate of tear methods*

ISO 7854:1995, *Rubber- or plastics-coated fabrics — Determination of resistance to damage by flexing*

ISO 11092:2014, *Textiles — Physiological effects — Measurement of thermal and water-vapour resistance under steady-state conditions (sweating guarded-hotplate test)*

ISO 12947-1:1998, *Textiles — Determination of the abrasion resistance of fabrics by the Martindale method — Part 1: Martindale abrasion testing apparatus*

ISO 12947-2:2016, *Textiles — Determination of the abrasion resistance of fabrics by the Martindale method — Part 2: Determination of specimen breakdown*

ISO 13688:2013, *Protective clothing — General requirements*

ISO 13688:2013/Amd.1:2021, *Protective clothing — General requirements — Amendment 1*

ISO 13934-1:2013, *Textiles — Tensile properties of fabrics — Part 1: Determination of maximum force and elongation at maximum force using the strip method*

ISO 13935-2:2014, *Textiles — Seam tensile properties of fabrics and made-up textile articles — Part 2: Determination of maximum force to seam rupture using the grab method*

ISO 13938-1:2019, *Textiles — Bursting properties of fabrics — Part 1: Hydraulic method for determination of bursting strength and bursting distension*

ISO 13938-2:2019, *Textiles — Bursting properties of fabrics — Part 2: Pneumatic method for determination of bursting strength and bursting distension*

ISO 23388:2018, *Protective gloves against mechanical risks*

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ISO 24231:2024, *Protective clothing — Protection against rain — Test method for ready-made garments against high energy droplets from above*

EN 530:2010, *Abrasion resistance of protective clothing material — Test methods*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN