

KAITSEKINDAD KAITSEKS MEHAANILISTE RISKIDE  
EEST

Protective gloves against mechanical risks

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 388:2016+A1:2018 sisaldab Euroopa standardi EN 388:2016+A1:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 388:2016+A1:2018 consists of the English text of the European standard EN 388:2016+A1:2018.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 12.12.2018.	Date of Availability of the European standard is 12.12.2018.
Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

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English Version

## Protective gloves against mechanical risks

Gants de protection contre les risques mécaniques

Schutzhandschuhe gegen mechanische Risiken

This European Standard was approved by CEN on 29 July 2016 and includes Amendment 1 approved by CEN on 24 October 2018.

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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN 388:2016+A1:2018) has been prepared by 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of an identical text or by endorsement, at the latest by June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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 includes Amendment 1 approved by CEN on 2018-10-24.

This document supersedes A1 EN 388:2016 A1.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

A1 This document has been prepared under a standardization request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of Regulation (EU) 2016/425.

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document. A1

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## 1 Scope

This European Standard specifies requirements, test methods, marking and information to be supplied for protective gloves against the mechanical risks of abrasion, blade cut, tear, puncture and, if applicable, impact.

This standard is intended to be used in conjunction with EN 420.

The test methods developed in this standard may also be applicable to arm protectors.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 420, *Protective gloves — General requirements and test methods*

☐A1 EN 1049-2, *Textiles — Woven fabrics — Construction — Methods of analysis — Part 2: Determination of number of threads per unit length (ISO 7211-2:1984 modified)* ☐A1

☐A1 EN 12127, *Textiles — Fabrics — Determination of mass per unit area using small samples* ☐A1

EN 13594:2015, *Protective gloves for motorcycle riders — Requirements and test methods*

☐A1 EN ISO 5084, *Textiles — Determination of thickness of textiles and textile products (ISO 5084:1996)* ☐A1

EN ISO 7500-1, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system (ISO 7500-1)*

EN ISO 11644, *Leather — Test for adhesion of finish (ISO 11644)*

☐A1 CEN ISO/TR 11827, *Textiles — Composition testing — Identification of fibres* ☐A1

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

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

EN ISO 13997:1999, *Protective clothing — Mechanical properties — Determination of resistance to cutting by sharp objects (ISO 13997:1999)*

☐A1 ISO 1139, *Textiles — Designation of yarns* ☐A1

ISO 4649:2010, *Rubber, vulcanized or thermoplastic — Determination of abrasion resistance using a rotating cylindrical drum device*

ISO 5725-2, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

☐A1 ISO 7211-1, *Textiles — Woven fabrics — Construction — Methods of analysis — Part 1: Methods for the presentation of a weave diagram and plans for drafting, denting and lifting*

ISO 7211-4, *Textiles — Woven fabrics — Construction — Methods of analysis — Part 4: Determination of twist in yarn removed from fabric*

ISO 7211-5, *Textiles — Woven fabrics — Construction — Method of analysis — Part 5: Determination of linear density of yarn removed from fabric* <sup>(A1)</sup>

ISO/IEC Guide 98-3, *Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

ISO/IEC Guide 98-4, *Uncertainty of measurement — Part 4: Role of measurement uncertainty in conformity assessment*

### 3 Terms and definitions

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

#### 3.1

##### **protective glove against mechanical risks**

glove that provides protection against at least one of the following mechanical risks: abrasion, blade cut, tear and puncture

#### 3.2

##### **glove providing a specific protection**

glove that is designed to provide an area of improved protection for the whole hand or part of it

Note 1 to entry: For example, palm protection style or protection against impact.

#### 3.3

##### **glove series**

single glove style or glove type with the same palm material up to the wrist line where the only variants are size, length, left/right hand and colour

#### 3.4

##### **arm**

part of the body between the wrist and the shoulder

#### 3.5

##### **gloves made from several layers**

- unbonded layers: a glove that is made from 2 or more layers of materials which are not connected together, after preparing the sample for the test;
- bonded layers: a glove that is made from 2 or more layers of materials which are connected together (e.g. glued, stitched, dipped, impregnated) after preparing the sample for the test

#### 3.6

##### **abrasion cycle**

completion of all the translational abrasion movements tracing a Lissajous figure comprising 16 rubs, i.e. 16 revolutions of the two outer drives and 15 revolutions of the inner drive of the Martindale abrasion tester

[SOURCE: EN ISO 12947-1]

Note 1 to entry: An abrasion rub is one revolution of the outer drives of the Martindale abrasion tester (see EN ISO 12947-1).