# SVENSK STANDARD
# SS-EN 407:2020

**Skyddshandskar mot termiska risker (hetta och/eller brand)**

**Protective gloves and other hand protective equipments against thermal risks (heat and/or fire)**

Svenska Institutet för Standarder

Språk: engelska/English

Utgåva: 3

Svenska Institutet för Standarder

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Upplysningar om sakinnehållet i standarden lämnas av Svenska institutet för standarder, telefon 08 - 555 520 00. Standarder kan beställas hos SIS som även lämnar allmänna upplysningar om svensk och utländsk standard.

Standarden är framtagen av kommittén för Skyddshandskar, SIS/TK 402/AG 08.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på www.sis.se - där hittar du mer information.

Fastställd: 2020-04-16
ICS: 13.340.40

Svenska Institutet för Standarder

Europastandarden EN 407:2020 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 407:2020.

Denna standard ersätter SS-EN 407:2004, utgåva 2.

The European Standard EN 407:2020 has the status of a Swedish Standard. This document contains the official version of EN 407:2020.

This standard supersedes the SS-EN 407:2004, edition 2.

# EUROPEAN STANDARD
# NORME EUROPÉENNE
# EUROPÄISCHE NORM

# EN 407

April 2020

ICS 13.340.40

Supersedes EN 407:2004

English Version

# Protective gloves and other hand protective equipments against thermal risks (heat and/or fire)

Gants de protection et autres équipements protecteur de la main contre les risques thermiques (chaleur et/ou feu)

Schutzhandschuhe und andere Handschutzausrüstung gegen thermische Risiken (Hitze und/oder Feuer)

This European Standard was approved by CEN on 21 October 2019.

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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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



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## European foreword

This document (EN 407:2020) 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 October 2020, and conflicting national standards shall be withdrawn at the latest by April 2021.

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 407:2004.

The major changes are:

— New tests 6.2, 6.3, 6.4, 6.8;

— Mechanical strength;

— Hand protective equipment;

— New pictogram Figure 7;

— Clause 8 (information supplied by the manufacturer: revised);

— New Annex A;

— New Annex B.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Regulation.

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

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Turkey and the United Kingdom.

# Introduction

This document has been developed to cover all type of Personal Protective Equipment protecting the hand, a part of the hand or a part of the arm against thermal risks, no matter where they are used (professional use, consumer, domestic use…).

# 1 Scope

This document specifies requirements, test methods, marking and information for protective gloves and other hand protective equipment's against thermal risks for professional use, consumer, domestic use.

This document is also applicable to arm protective equipment.

It is used for all gloves and other hand protective equipment's which protect the hands or part of the hand against heat and/or fire in one or more of the following forms: flame, contact heat, convective heat, radiant heat, small splashes or large quantities of molten metal.

This document is only applicable in conjunction with EN ISO 21420:2020.

This document does not apply to gloves for fire-fighters or welding that have their own standards.

# 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.

EN 348:1992, *Protective clothing — Test method: Determination of behaviour of materials on impact of small splashes of molten metal*

EN ISO 21420:2020, *Protective gloves — General requirements and test methods (ISO 21420:2020)*

EN 659:2003+A1:2008, *Protective gloves for firefighters*

EN ISO 6942:2002, *Protective clothing — Protection against heat and fire — Method of test: Evaluation of materials and material assemblies when exposed to a source of radiant heat (ISO 6942)*

EN ISO 7500-1:2018, *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 7500-1:2018)*

EN ISO 9151:2016, *Protective clothing against heat and flame — Determination of heat transmission on exposure to flame (ISO 9151)*

EN ISO 9185:2007, *Protective clothing — Assessment of resistance of materials to molten metal splash (ISO 9185)*

EN ISO 12127-1:2015, *Clothing for protection against heat and flame — Determination of contact heat transmission through protective clothing or constituent materials — Part 1: Contact heat produced by heating cylinder (ISO 12127-1)*

EN ISO 15025:2016, *Protective clothing — Protection against flame — Method of test for limited flame spread (ISO 15025)*

# 3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

**3.1**
**after flame time**
length of time for which a material continues to flame, under the specified test conditions, after the ignition source has been removed

**3.2**
**afterglow time**
time for which a material continues to afterglow, under specified test conditions after cessation of after flaming or after removal of the ignition source

**3.3**
**back of the glove**
back of hand, excluding fingers

**3.4**
**char**
formation of a carbonaceous brittle residue when material is exposed to thermal energy

[SOURCE: EN ISO 15025:2016, 3.4]

**3.5**
**cuff**
part of the glove that extends beyond the opening of glove body to cover the wrist area and sometimes part of the forearm

**3.6**
**debris**
material separating from the specimen during the test procedure and falling from the specimen without flaming

**3.7**
**dripping**
detachment of molten droplets during the melting process

**3.8**
**flaming debris**
material separating from the specimen during the test procedure and igniting the filter paper

**3.9**
**hands protective equipment against thermal risks**
equipment which protect hand and/or areas of the hand intended to be exposed to thermal risks

Note 1 to entry: See examples in Annex A.

**3.10**
**high thermal resistant gloves**
gloves which claimed at least level 3 for one of the following properties: convective heat, contact heat, radiant heat, small metal splashes, large quantities of molten metal

**3.11**
**hole**
opening, break, or discontinuity of any size in the original structure of the test specimen's material caused by application of the test flame

**3.12**
**melting**
liquefaction of the material under the influence of heat

**3.13**
**innermost layer**
layer closest to the wearer's skin

**3.14**
**reinforcement**
additional layer which does not cover the full area where the protection is claimed

Note 1 to entry: Most of the time, this area has a limited surface to preserve comfort and dexterity of the gloves.

# 4 General requirements

## 4.1 General

Where protection against other than thermal risk is needed the specific standard shall be used.

The protective gloves according to this document shall meet all the applicable requirements of EN ISO 21420:2020.

When parts of the glove are made from dissimilar materials, these dissimilar materials shall be tested separately, except if another way is specified in the standard. The results of each material shall comply with the requirements given in 4.5.

In those circumstances when the sample size is significantly larger than the particular part of the glove or hands protective equipment being tested, then the manufacturer shall be requested to supply samples of identical material.

## 4.2 Cleaning

All tests required in this document shall be performed on unused gloves or hand protective equipment unless otherwise specified.

If care instructions are provided, the relevant tests shall be performed on the gloves or hand protective equipment, before and after they have been subjected to the procedure described in the care instruction, including the maximum recommended number of cleaning cycles. The levels of performance and the mechanical strength (4.3) are given by the lowest of the 2 results obtained before and after cleaning.

NOTE Manufacturer’s instructions typically indicate one or several of the various methods and processes of ISO 6330, ISO 15797 or equivalent as standardized processes for cleaning.