



# SLOVENSKI STANDARD SIST EN ISO 12127-2:2008

01-maj-2008

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Clothing for protection against heat and flame - Determination of contact heat transmission through protective clothing or constituent materials - Part 2: Test method using contact heat produced by dropping small cylinders (ISO 12127-2:2007)

iTeh STANDARD PREVIEW

Schutzkleidung gegen Hitze und (Flammen - Bestimmung des Kontaktwärmedurchgangs durch Schutzkleidung oder -materialien - Teil 2: Prüfverfahren, bei dem Kontaktwärme erzeugt wird durch kleine fallende Zylinder (ISO 12127-2:2007)

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Vêtements de protection contre la chaleur et la flamme - Détermination de la transmission thermique par contact à travers les vêtements de protection ou leurs matériaux constitutifs - Partie 2: Méthode d'essai utilisant la transmission thermique par contact produite par des petits cylindres compte-gouttes (ISO 12127-2:2007)

**Ta slovenski standard je istoveten z: EN ISO 12127-2:2007**

**ICS:**

13.340.10      Varovalna obleka      Protective clothing

**SIST EN ISO 12127-2:2008**      en

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EUROPEAN STANDARD

EN ISO 12127-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2007

ICS 13.340.10

English Version

Clothing for protection against heat and flame - Determination of contact heat transmission through protective clothing or constituent materials - Part 2: Test method using contact heat produced by dropping small cylinders (ISO 12127-2:2007)

Vêtements de protection contre la chaleur et la flamme - Détermination de la transmission thermique par contact à travers les vêtements de protection ou leurs matériaux constitutifs - Partie 2: Méthode d'essai utilisant la transmission thermique par contact produite par des petits cylindres compte-gouttes (ISO 12127-2:2007)

Schutzkleidung gegen Hitze und Flammen - Bestimmung des Kontaktwärmedurchgangs durch Schutzkleidung oder Materialien - Teil 2: Durch fallende Zylinder erzeugte Kontaktwärme (ISO 12127-2:2007)

This European Standard was approved by CEN on 21 September 2007.

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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 Management Centre has the same status as the official versions.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This document (EN ISO 12127-2:2007) has been prepared by Technical Committee ISO/TC 94 "Personal safety - Protective clothing and 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 June 2008, and conflicting national standards shall be withdrawn at the latest by June 2008.

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

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 EC Directive(s).

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

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

### Endorsement notice

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The text of ISO 12127-2:2007 has been approved by CEN as a EN ISO 12127-2:2007 without any modification.

## Annex ZA (informative)

### Relationship between this International Standard and the Essential Requirements of EU Directive 89/686/EEC Personal protective equipment (PPE)

This International Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide one means of conforming to Essential Requirements of the New Approach Directive 89/686/EEC.

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of Directive 89/686/EEC, Annex II, clause 3.6.

**WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.**

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**Clothing for protection against heat and  
flame — Determination of contact heat  
transmission through protective clothing  
or constituent materials —**

Part 2:

**Test method using contact heat produced  
by dropping small cylinders****(standards.iteh.ai)***Vêtements de protection contre la chaleur et la flamme —**Détermination de la transmission thermique par contact à travers les  
vêtements de protection ou leurs matériaux constitutifs —*<https://standards.iteh.ai/catalog/standards/sist/a5d629e4-90b6-4515-8688-26c47e1632/sist/a5d629e4-90b6-4515-8688-26c47e1632-2>**Partie 2: Méthode d'essai utilisant la transmission thermique par contact  
produite par des petits cylindres compte-gouttes**Reference number  
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**ISO 12127-2:2007(E)****PDF disclaimer**

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 12127-2 was prepared by Technical Committee ISO/TC 94, *Personal safety — Protective clothing and equipment*, Subcommittee SC 13, *Protective clothing*.

ISO 12127 consists of the following parts, under the general title *Clothing for protection against heat and flame — Determination of contact heat transmission through protective clothing or constituent materials*:

- *Part 1: Test method using contact heat produced by heating cylinder*
- *Part 2: Test method using contact heat produced by dropping small cylinders*

**ISO 12127-2:2007(E)****Introduction**

Protective clothing designed to protect the welders is exposed to high-temperature particles generated from the welding point into the welding environment. These hot particles are small splashes of molten metal, sparks and slag. When the small splashes of molten metal are scattered, they produce heat into the atmosphere, become oxidized and start to change from a molten state into a solidified state.

The diversity of the conditions in which splashes of molten metal and other hot particles may come into contact with materials used for welder's protective clothing makes it difficult to evaluate the hazards that may arise under conditions of use.

The most important protective function is resistance to heat transfer through the layers of clothing from high-temperature metal drops, sparks and solidified hot particles trapped on the fabric in folds or in seamed areas.

The test method described in this part of ISO 12127 allows this heat transfer to be assessed when a hot steel cylinder simulating a small hot particle is allowed to fall on the material. Furthermore, this method can be used to assess charring and hole formation in the material.

This part of ISO 12127 forms a part of a series of standards concerned with clothing designed to protect against heat and fire. This part of ISO 12127 is especially used to assess the consequences for protection of the impact of small hot metal particles on clothing materials.

ISO 12127-1 is a revision of ISO 12127:1996.

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# Clothing for protection against heat and flame — Determination of contact heat transmission through protective clothing or constituent materials —

## Part 2: Test method using contact heat produced by dropping small cylinders

### 1 Scope

This part of ISO 12127 specifies a test method designed to evaluate the heat transfer and the behaviour of materials used for protective clothing when such materials are struck by high temperature metal particles, especially when these are trapped in the folds of the garment in working situations.

The results obtained by this method permit the comparison of the behaviour of different materials which have undergone this test under standardized conditions. They do not permit conclusions to be drawn with respect to contacts with large splashes of molten cast iron or other metal, nor do they allow the behaviour of complete garments under industrial conditions to be predicted.

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### 2 Terms and definitions

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

#### 2.1

##### maximum temperature

$T_{\max}$

maximum temperature of the calorimeter after contact of the cylinder with the sample

#### 2.2

##### starting temperature

$T_0$

temperature of the calorimeter at the starting point of the temperature measurement

#### 2.3

##### start of the temperature measurement

start the temperature measurement at the exact time when the solenoid is switched on

#### 2.4

##### temperature difference

$\Delta T$

change in temperature between the maximum temperature reached and the temperature of the calorimeter at the start of temperature measurement ( $\Delta T = T_{\max} - T_0$ )

#### 2.5

##### cone temperature

$T_c$

temperature of the cone when removed from the oven