



# SLOVENSKI STANDARD

## SIST EN 340:1996

01-februar-1996

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### Varovalna obleka - Splošne zahteve

Protective clothing - General requirements

Schutzkleidung - Allgemeine Anforderungen

Vêtements de protection - Exigences générales

Ta slovenski standard je istoveten z: **EN 340:1993**

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EUROPEAN STANDARD

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English version

## Protective clothing - General requirements

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Vêtements de protection - Exigences générales (standards.iteh.ai) Schutzkleidung - Allgemeine Anforderungen

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This European Standard was approved by CEN on 1993-07-15. 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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

## CEN

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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## Foreword

This European Standard was prepared by CEN/TC 162 "Protective clothing including hand and arm protection and lifejackets" of which the secretariat is held by DIN.

This European Standard has been prepared under a mandate given to CEN by the Commission of the European Communities and the European Free Trade Association, and supports essential requirements of EC Directive(s).

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 January 1994, and conflicting national standards shall be withdrawn at the latest by January 1994.

In accordance with the CEN/CENELEC Internal Regulations, following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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## 0 Introduction

This European standard is a reference standard to be called up as appropriate by specific standards. This standard cannot be used alone but only in combination with the specific standard.

## 1 Scope

This European Standard specifies general requirements for ergonomics, ageing, sizing, marking of protective clothing and for information supplied by the manufacturer.

## 2 Normative references

This European standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

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ISO 105		Textiles - Test for colour fastness
ISO 3175	1979	Textiles - Determination of dimensional change on dry cleaning in perchlorethylene - Machine method
ISO 3635	1981	Size designation of clothes - Definitions and body measurement procedure
ISO 3758	1991	Care labelling code using symbols
ISO 5077	1984	Textiles - Determination of dimensional change in washing and drying
ISO 6330	1984	Textiles - Domestic washing and drying procedures for textile testing
ISO/DIS 11092		Textiles - Determination of physiological properties, Part 1: Measurement of thermal- and water vapour resistance under steady state conditions

### 3 Definitions

For the purposes of this standard the following definitions apply:

#### 3.1 Hazard

Situation which can be the cause of harm or damage to the health of the human body.

Note: There are different general types of hazards, e. g. mechanical hazards, chemical hazards, cold hazards, heat and/or fire hazards, biological agents hazards, radiation hazards.

Certain of these types of hazards can, according to circumstances, derive from more specific hazards. Thus, a heat hazard can derive from contact heat, radiant heat etc. for each of which there can be separate test methods.

Particular garments have been designed to give protection against the hazards encountered in specific types of work. Examples of such garments are aprons that provide protection against hand knives, trousers for use with chainsaws, clothing for protection against foul weather, high visibility clothing and motorcycle rider's protective clothing.

#### 3.2 Risk

Probability of a specific undesired event occurring so that a hazard is realized.

#### 3.3 Protective clothing

Clothing which covers or replaces personal clothing, and which is designed to provide protection against one or more hazards.

#### 3.4 Ageing

Change of one or more initial properties of protective clothing materials during the passage of time.

#### 3.5 Level of performance

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

Note 1: The results of the application of an appropriate test method enable the performance of protective clothing to be assessed against the possible effects of a hazard. It is appropriate in many cases for such results (from each test method) to be graded into a set of up to five levels of performance, whereby a high level number corresponds to a high performance.

Specific standards can thus define a number of sets of levels of performance, each set being derived by grading the results from the corresponding test method.

Note 2: Since levels of performance are based upon the results of testing in a laboratory, they do not necessarily relate to actual conditions in the

workplace. Thus protective clothing should be selected with a full appreciation of the conditions and tasks related to the end-user process, taking account of the risks involved and of the data supplied by the manufacturer in relation to the performance of the protective clothing against the hazard or hazards in question.

#### 4 Ergonomics

Protective clothing should be designed and manufactured as follows:

- a) The materials and components of protective clothing should not be known to adversely affect the wearer.
- b) It should offer the wearer the best possible degree of comfort that is consonant with the provision of adequate protection.
- c) Parts of the protective clothing that can come into contact with the user should be free of roughness, sharp edges and projections that could cause excessive irritation or injuries.
- d) Its design should facilitate its correct positioning on the user and should ensure that it remains in place for the foreseeable period of use, taking into account ambient factors, together with the movements and postures that the wearer could adopt during the course of work. For this purpose, appropriate means, such as adequate adjustment systems or adequate size ranges, should be provided so as to enable protective clothing to be adapted to the morphology of the user.
- e) It should be as light as possible without prejudice to the design strength and efficiency.

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Where permissible, protective clothing shall have a low water vapour resistance. The test method(s) for water vapour resistance shall be specified in the specific standard.

Note 1: An international test method is standardized in ISO/DIS 11092. Other test methods exist in national standards. The manufacturer may apply a different reproducible method for e. g. quality supervision to test the water vapour permeability for use other than classification or testing to meet specified values as laid down in related standards.

Note 2: If, because of the protection required, water vapour permeability is not possible then the protective clothing should reduce the physiological strain as much as possible e. g. by ventilation.

#### 5 Ageing

##### 5.1 General

Ageing can be caused by a single factor or several factors. This standard is only concerned with the detrimental effects of colour alteration, cleaning and dimensional change to the levels of performance (see clause 5.2 to 5.4).

##### 5.2 Colour fastness

If the specific standard contains requirements for colour fastness, protective clothing shall be tested in accordance with the relevant part of ISO 105 (for



example ISO 105-B02: 1988, colour fastness to artificial light: Xenon arc fading lamp test).

### 5.3 Cleaning

If the specific standard contains requirements for checking the detrimental effects of cleaning, the test procedure shall be as follows, unless stated otherwise in a specific standard.

If care labelling allows washing or dry cleaning and/or finishing, then the protective clothing shall be washed in accordance with ISO 6330 or dry cleaned in accordance with ISO 3175 (clause 8 and 10 are not applicable) and/or finally finished.

The appropriate number of cleaning processes shall be defined in the specific standard.

If washing is permitted as well as dry cleaning, then both procedures shall be carried out on one sample with half the specified number of processes mentioned in the specific standard.

### 5.4 Dimensional change due to cleaning

The test procedure for dimensional change for washing shall be carried out in accordance with ISO 5077 and for dry cleaning in accordance with ISO 3175.

Change in dimension of material for protective clothing shall not exceed  $\pm 3\%$  in either length or width, unless stated otherwise in a specific standard.

One sample shall be subjected to 5 washing or dry cleaning processes. If washing and dry cleaning is permitted, the sample shall only be washed.

## 6 Sizing

In the size designation of protective clothing measurements have been so prescribed that they will define a body size.

The way to measure the body is according to ISO 3635:1981. The arm length is the distance between the wrist and the highest point of the armball on the edge of the shoulder, measured on top of the arm with the arm hanging straight.

The control dimensions for protective clothing shall be height, chest or bust girth and waist girth.

The size designation of each garment shall comprise at least 2 control dimensions in centimetres.

These 2 control dimensions shall be either:

- the height and chest or bust girth, or
- the height and the waist girth.

Height and girth ranges shall be according to table 1.