



**SLOVENSKI STANDARD**  
**SIST-TP CEN/TR 15321:2006**  
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**Smernice za izbiro, uporabo, nego in vzdrževanje varovalne obleke**

Guidelines on the selection, use, care and maintenance of protective clothing

Leitfaden für Auswahl, Gebrauch, Pflege und Instandhaltung von Schutzkleidung

Guide de sélection, d'utilisation, d'entretien et de maintenance des vêtements de protection

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**Ta slovenski standard je istoveten z: CEN/TR 15321:2006**

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ICS 13.340.01

English Version

## Guidelines on the selection, use, care and maintenance of protective clothing

Guide pour la sélection, à l'utilisation, aux précautions  
d'emploi et à l'entretien de vêtements de protection

Leitfaden für Auswahl, Gebrauch, Pflege und  
Instandhaltung von Schutzkleidung

This Technical Report was approved by CEN on 26 December 2005. It has been drawn up by the Technical Committee CEN/TC 162.

CEN members are the national standards bodies of Austria, Belgium, 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 United Kingdom.

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## Foreword

This document (CEN/TR 15321:2006) 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.

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.

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## Introduction

European Standards for protective clothing are developed to ensure compliance with the European directive 89/686/EEC. Since the primary aim of this directive is to guarantee a free market in the European Union, these standards are made to meet the needs for a common set of safety requirements and test methods.

The actual use of protective clothing is not covered by this directive, nor by the standards related.

To meet the needs for a document on selection, use, care and maintenance, this CEN report has been made. Regulations on health and safety are based on directive 89/656/EEC, giving minimum requirements on the selection and use of PPE on the workplace. The EU Member States may impose more stringent requirements and define exposure limits. Therefore, this CEN reports gives recommendations on the process and the management, not by telling the user what to do when, but by providing checklists instead.

Furthermore, this CEN Technical Report gives an outline for other recommendations on selection, use, care and maintenance for other documents for types of protective clothing.

The information in this Technical Report has been produced to assist employers (or the person who advises the employer such as suppliers of PPE or services, inspection, insurance companies etc.) in making the necessary decisions regarding the selection, use, care and maintenance of protective clothing.

The purpose of this Technical Report is to highlight the main areas that an employer needs to consider. Most paragraphs of this Technical Report contain checklists. All of these lists are provided to give guidance only and are not exhaustive.

This Technical Report may serve as guidance and checklist when the company is preparing its own management system or program for protective clothing.

Normative references are not provided in this Technical Report. All references are of an informative nature only.

## 1 Scope

This Technical Report sets out guidance for the selection, use, care and maintenance of clothing designed to provide protection to the wearer. The guidance set out in this Technical Report are intended for all types of protective clothing and may be completed by additional specific guidelines for clothing designed to address specific risks.

## 2 Terms and definitions

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

### 2.1

#### **hazard**

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

### 2.2

#### **risk**

combination of the frequency, or probability, of occurrence and the consequence of a specified hazardous event

### 2.3

#### **selection**

process of determining the type of protective equipment (garments) that is necessary for the required protection

### 2.4

#### **use**

application of protective clothing including its limitations

### 2.5

#### **care**

to keep in good working order, including procedures for cleaning, decontamination and storage

### 2.6

#### **maintenance**

to preserve from loss or deterioration, to include procedures for inspection, repair and ultimate removal from service

## 3 Selection

### 3.1 General

European Directive 89/656/EEC defines obligations of employers as regards selection of PPE. In particular, it mentions in section II – articles 4 and 5 that before choosing a PPE, the employer is required to assess the PPE he intends to use. This assessment shall involve:

- analysing and assessment of risks that can not be avoided by other means;
- definition of the characteristics which PPE must have in order to answer to these risks;
- assessment of the characteristics of PPE available.

The process of selecting protective clothing will follow these steps and therefore, can be divided into a number of stages.

### **3.2 Risk assessment**

The process of carrying out a risk assessment should include:

- identification of the activities;
- list of the hazards present (a list of examples of hazards is provided in Annex C of this Technical Report);
- quantification of the risks that would result from exposure to the hazards;
- considerations of the protection provided by other control measures before the application of PPE;
- define the level of residual risks that need to be covered by protective clothing;
- determination of the level and extent of protection required from the protective clothing (in absolute or relative terms) taking into account parameters such as duration of exposure to the hazard, ambient temperature and other working conditions;
- identification of (additional) risks occurring by the use of PPE.

A number of risk assessment models may be used to determine the level of risk associated with the activities. Annex A of this Technical Report gives reference to some of the existing documents on this subject.

### **3.3 Defining the level of protection required for each activity from the protective clothing**

- Determine what parts of the body require protection;
- determine the type of protection required;
- identify the existence of appropriate standards or methods in which performance levels or test methods against the hazard in question are defined;
- determine the level(s) of protection required (for the relevant parts of the body) in relative or absolute terms for each item of protective clothing;
- if no standard or method is available, further research (e.g. in co-operation with a notified body) may be necessary to obtain a clear set of requirements and needed protection levels.

### **3.4 Collecting information on available protective clothing**

- Carry out market research to determine products that are available;
- analyse the performance of presently used protective clothing if applicable:
  - durability experience;
  - protection offered as opposed to protection required;
  - user's experience on ergonomics and comfort;
- obtain information from the potential suppliers on performance levels and manufacturer information;



- gather information from comparable organisations using similar items of protective clothing for similar tasks;
- determine compatibility of all items of PPE to be used. Specific attention should be given to the functionality of the complete equipment for the activities and working conditions for which the PPE are required.

NOTE If after collating all available data, it is established that suitable protective clothing is not available, then it may be necessary for an organisation to carry out research and development work.

### 3.5 Wearer trials

The purpose of a wearer trial is to assess the compatibility and the ergonomic practicality of the protective equipment. Obtaining feedback from the intended users is imperative at this stage, as such information will provide valuable data relating to the practical performance of the protective clothing, and also give confidence to the users, thus ensuring that the selected items are used.

When conducting wearer trials, the following issues should be considered:

- ease and speed of putting on and taking off;
- ease and extent of adjustability;
- acceptance in terms of comfort and weight;
- compatibility with all other items of PPE which are worn during the foreseen activity;
- ability to undertake all tasks expected without hindrance or difficulty;
- preservation of the protection in all working positions;
- performance of the garments after a number of cleaning cycles according to the manufacturers instructions.

When wearer trials are conducted a systematic approach should be adopted:

- participants should be selected based on a cross section of the relevant occupational group (height, weight, age, gender etc.);
- participants should individually evaluate each item of the protective clothing assembly on trial;
- evaluation feedback should be obtained in a structured manner allowing for both qualitative and quantitative data collection and analysis. This may be achieved by using a structured questionnaire, structured or semi-structured interviews and / or group discussions;
- number of participants has to be sufficient to ensure that the results obtained are statistically significant and representative of the total workforce.

### 3.6 Additional testing

To assist any decision making process, additional laboratory and practical testing may be required:

- resistance to / behaviour after laundry / cleaning;
- resistance to / behaviour after decontamination;
- resistance to / behaviour after UV exposure;

- abrasion resistance;
- resistance of seams and/or other assembling systems;
- durability of the properties (protective or other) of the garment after extended period of use;
- compatibility with other types of PPE used by the wearer.

### **3.7 Other considerations**

In order to establish the overall performance and the total cost of ownership or rental or provision of the protective clothing, other considerations need to be made:

- information supplied:
  - is training offered as part of the procurement package (including training provided by third parties)?
  - what are the replacement requirements and costs for components?
  - what quality assurance measures are in place prior to the delivery?
  - what are the requirements for cleaning and decontamination?
  - what are the inspection and maintenance requirements?
  - can corporate / role identity be incorporated without affecting performance?
- service / logistics:
  - is a post procurement service offered?
  - are stock items held by the supplier?
  - what is the delivery time for standard and special sizes?
  - what sizes are available?
  - what are the collection and delivery arrangements?
  - should stock be held within the organisation?
  - how is the internal distribution to the users to be organised?
  - how is the protective clothing to be safely disposed of?
  - in the case of rental of clothing, what are the guarantees of quality offered by the rental company?
  - in the case of rental of clothing, does the rental company assure care and maintenance of the protective clothing?

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**NOTE** When the outcome of a selection process results in the employer providing a number of items of protective clothing for different tasks/activities, the user/wearer may be permitted (after being provided with appropriate training) to select the item(s) that provide the necessary protection at the time of use. Any selection made at that stage is based upon the risk assessment carried out by the employer or based upon an informed dynamic risk assessment by the user at time of use.

## 4 Use

### 4.1 General

As expressed in European Directive 89/656/EEC, it is the employer's responsibility to define conditions in which the PPE has to be used, in particular as regards the period for which it is worn, which shall be determined on the basis of the seriousness of the risk, the frequency of exposure to the risk, the characteristics of the workstation of each worker and the performance of the PPE.

To ensure the correct use of the equipment, following stages should be followed.

### 4.2 Instructions for use

The manufacturer of the PPE has to draw up users instructions and supply them with the PPE placed on the market. The content of this Technical Report is fixed in the directive 89/686/EEC and further developed in European Standards. It has to be provided at least in the official language(s) of the Member State of destination and has to be precise and comprehensible.

According to Directive 89/656/EEC, the employer has to check that these instructions are understandable by the user and that the PPE is used in accordance with these instructions.

### 4.3 Training

It is a requirement under the PPE Regulations (Directive 89/656 section II, Article 4 paragraph 8) that all employees / users are trained how to use their protective clothing correctly, prior to the equipment being introduced into active service. The basis for this training is the "instructions for use" as provided by the manufacturer. After the training, the wearer should be aware of:

- what are the limitations and capabilities of the protective clothing:
  - what the protective clothing will protect from;
  - what the protective clothing will not protect from;
  - what the effects are (if any) of long term use;
- how to use / wear the protective clothing;
- why comply with the manufacturers or suppliers instructions;
- how to store the protective clothing when not in use;
- what are the arrangements for cleaning and decontamination;
- how to determine when the protective clothing is no longer fit for purpose;
- how to obtain replacements.

**NOTE** The instructions/training provided to the wearer/user will depend on the level of risk and complexity of the protective clothing to be provided. The provision of written instructions or information may not be sufficient and the users/wearers may need to be involved in practical demonstrations, training and exercise.

### 4.4 Introducing protective clothing into service for the first time

The benefits and the limits of the new garment should be repeated and demonstrated at the time the wearer receives the equipment.