

Kaitseriietus. Külmakaitsekomplektid ja -rõivad

Protective clothing - Ensembles and garments for protection against cold

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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| <p>Käesolev Eesti standard EVS-EN 342:2004 sisaldab Euroopa standardi EN 342:2004 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 26.10.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p> | <p>This Estonian standard EVS-EN 342:2004 consists of the English text of the European standard EN 342:2004.</p> <p>This document is endorsed on 26.10.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p> |
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| <p>Käsitlusala: This European Standard specifies requirements and test methods for performance of clothing ensembles (i.e. two piece suits or coveralls) and of single garments for protection against cold environment. It does not include specific requirements for head wear, footwear and gloves intended to prevent local cooling.</p> | <p>Scope: This European Standard specifies requirements and test methods for performance of clothing ensembles (i.e. two piece suits or coveralls) and of single garments for protection against cold environment. It does not include specific requirements for head wear, footwear and gloves intended to prevent local cooling.</p> |
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ICS 13.340.10

Võtmesõnad:

English version

Protective clothing - Ensembles and garments for protection
against cold

Vêtements de protection - Ensembles vestimentaires et
articles d'habillement de protection contre le froid

Schutzkleidung - Kleidungssysteme und Kleidungsstücke
zum Schutz gegen Kälte

This European Standard was approved by CEN on 16 April 2004.

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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 Central Secretariat has the same status as the official versions.

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Contents

| | page |
|---|------|
| Foreword..... | 3 |
| Introduction | 4 |
| 1 Scope | 5 |
| 2 Normative references | 5 |
| 3 Terms and definitions | 5 |
| 4 Performance assessment and requirements | 7 |
| 5 Testing methods | 8 |
| 6 Sizes | 9 |
| 7 Marking and care labelling..... | 9 |
| 8 Information supplied by the manufacturer | 9 |
| Annex A (normative) Standard reference clothing for use with protective clothing against cold..... | 11 |
| Annex B (informative) Levels of performance | 13 |
| Annex C (normative) Calibration and measurements for resultant effective thermal insulation..... | 15 |
| Annex D (informative) Garment design features | 17 |
| Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 89/686/EEC Personal Protective Equipment | 18 |
| Bibliography | 19 |

Foreword

This document (EN 342:2004) 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 January 2005, and conflicting national standards shall be withdrawn at the latest by January 2005.

This document supersedes ENV 342:1998.

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 Directive 89/686/EEC Personal Protective Equipment.

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

Introduction

This European Standard is published to achieve a common basis in Europe for requirements and test methods for protective clothing ensembles and garments against cold in the interest of especially manufacturers, test institutes and end-users. The measured properties and their subsequent classification are intended to ensure an adequate protection level under different user conditions. Thermal insulation of the ensemble or garment and the air permeability are the essential properties to be tested and marked on the label.

Thermal insulation is the most important property and it is measured by using a full-sized thermal manikin with the ensemble or garment and accompanying reference clothing in order to account for the effect of layers, fit, drape, coverage and shape. In this respect this standard differs from many other standards specifying only material properties. The insulation is tested with new ensembles and garments. It should be recognized that ensembles and garments in frequent use may lose significant insulation capacity due to laundering and wear. In general high quality products and well maintained clothing are less affected in this respect.

Wind may considerably increase convective heat losses. Therefore, the air permeability of the outer garment material is an important factor to be taken into account in relation to the protection of the wearer against cold.

The insulation requirements and air effects for given conditions can be assessed by methods given in ENV ISO 11079.

By this method the resultant effective thermal insulation value I_{cler} can be determined and used to define temperature ranges (see Tables B.1 and B.2). Therefore the protective value of a clothing ensemble is evaluated by comparing its measured insulation value and the calculated required insulation value (I_{REQ}). This comparison is the basis of Tables B.1 and B.2.

This guidance information for the selection of the appropriate cold protective garment(s) is one of the benefits, if the resultant effective thermal insulation value I_{cler} of the garment(s) has been measured on a thermal manikin.

Sweating should be avoided in continuous cold exposure, since moisture absorption will progressively reduce insulation. This is best controlled by selecting optimal rather than maximal insulation and flexible, adjustable garments rather than fixed and closed ensembles. It is more efficient to get rid of heat and moisture by ventilation of clothing through adjustable openings and button-up, than by passive diffusion through layers of garments. When the environment is below freezing, very little, if any, water vapour escapes through the material because of condensation and, eventually, it can freeze in clothing. In some conditions with intermittent exposures (e.g. cold store work) or in conditions close to and above 0 °C the water vapour resistance value of fabrics become increasingly important and fabrics with a low value may contribute to improved heat balance and thermal comfort.

For protection of a specific part of the body, EN 14058 applies.

1 Scope

This European Standard specifies requirements and test methods for performance of clothing ensembles (i.e. two piece suits or coveralls) and of single garments for protection against cold environment.

It does not include specific requirements for head wear, footwear and gloves intended to prevent local cooling.

2 Normative references

The following referenced documents are indispensable for the application 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 340, *Protective clothing — General requirements*.

EN 20811, *Textiles — Determination of resistance to water penetration — Hydrostatic pressure test*.

EN 31092, *Textiles — Determination of physiological properties — Measurement of thermal and water-vapour resistance under steady-state conditions (sweating guarded-hotplate test) (ISO 11092:1993)*.

EN ISO 9237, *Textiles — Determination of permeability of fabrics to air (ISO 9237:1995)*.

EN ISO 15831, *Clothing — Physiological effects — Measurement of thermal insulation by means of a thermal manikin (ISO 15831:2004)*.

EN ISO 4674-1, *Rubber- or plastics-coated fabrics — Determination of tear resistance — Part 1: Constant rate of tear methods (ISO 4674-1:2003)*.

3 Terms and definitions

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

3.1

cold environment

environment characterized by the combination of humidity and wind at air temperature below – 5 °C

NOTE See ENV ISO 11079.

3.2

garment

individual component of a clothing ensemble, the wearing of which provides protection to the part of the body that it covers

3.3

ensemble

clothing consisting of a two-piece suit or one-piece suit (coverall) or a number of garments covering the body, except head, hands and feet

3.4

outer shell material

outermost material of which the protective clothing is made