Kaitseriietus. Kuumuse ja leekide eest kaitset pakkuv riietus

Protective clothing - Clothing to protect against heat and flame

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 11612:2008 sisaldab Euroopa standardi EN ISO 11612:2008 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 11612:2008 consists of the English text of the European standard EN ISO 11612:2008.
Standard on kinnitatud Eesti Standardikeskuse 15.12.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 15.12.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 01.11.2008.	Date of Availability of the European standard text 01.11.2008.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

ICS 13.340.10

Võtmesõnad:

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 11612

November 2008

ICS 13.340.10

Supersedes EN 531:1995

English Version

Protective clothing - Clothing to protect against heat and flame (ISO 11612:2008)

Vêtements de protection - Vêtements de protection contre la chaleur et les flammes (ISO 11612:2008)

Schutzkleidung - Kleidung zum Schutz gegen Hitze und Flammen (ISO 11612:2008)

This European Standard was approved by CEN on 8 October 2008.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN ISO 11612:2008: E

Foreword

This document (EN ISO 11612:2008) 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, in collaboration with Technical Committee ISO/TC 94 "Personal safety - Protective clothing and equipment".

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 May 2009, and conflicting national standards shall be withdrawn at the latest by May 2009.

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 supersedes EN 531:1995.

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, 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

The text of ISO 11612:2008 has been approved by CEN as a EN ISO 11612:2008 without any modification.

Annex ZA
(informative)

Relationship between this International Standard and the Essential Requirements of EU Directive 89/686/EEC

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 on the approximation of the laws of the Member States relating to personal protective equipment.

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 normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

Table ZA.1 — Correspondence between this International Standard and Directive 89/686/EEC

Clause(s)/sub-clause(s) of this International Standard	**Essential Requirements (ERs) of EU Directive 89/686/EEC, Annex II**	**Qualifying remarks/Notes**
4.3, 4.5 c)	3.6.1 Protection against heat and/or fire. PPE constituent materials and other components	
4.1, 4.2, 4.4, 4.5	1.2.1 Absence of risks and other ‘inherent' nuisance factors	
5.2	1.4 Information supplied by manufacturer	
5.2.3	2.4 PPE subject to ageing	
6.2	1.2.1 Absence of risks and other ‘inherent’ nuisance factors	
6.3	3.6.1 Protection against heat and fire. PPE constituent materials and other components	
6.4	1.2.1 Absence of risks and other ‘inherent' nuisance factors	
6.5	1.3.2 Lightness and design strength	
6.6 a)	3.6.2 Protection against heat and fire. Complete PPE ready for use	
6.6 b)	2.2 PPE ‘enclosing' the parts of the body to be protected	
6.8	1.2.1 Absence of risks and other ‘inherent' nuisance factors	
6.9.2, 6.9.3	1.2.1.1 Suitable constituent materials	Partially

Table ZA.2 (*continued*)

Clause(s)/sub-clause(s) of this International Standard	Essential Requirements (ERs) of EU Directive 89/686/EEC, Annex II		Qualifying remarks/Notes
7.2, 7.3, 7.4, 7.5, 7.6	1.1.2.2	Classes of protection appropriate to different levels of risk	
7.2, 7.3, 7.4, 7.5, 7.6	3.6.1	Protection against heat and fire. PPE constituent materials and other components	Visors not covered
7.2, 7.3, 7.4, 7.5, 7.6	3.6.2	Protection against heat and fire. Complete PPE ready for use	Visors not covered
8	2.12	PPE bearing one or more identification or recognition marks directly or indirectly relating to health and safety	
9	1.4	Information supplied by the manufacturer	

WARNING — Other requirements and other EU Directives may be applicable to the products falling within the scope of this standard.

Contents

Page

Introduction

The purpose of this International Standard is to provide minimum performance requirements for clothing to protect against heat and flame, which could be worn for a wide range of end uses. All the other standards listed in the Foreword deal also with clothing to protect against heat and fire, but rather for quite specific products or end uses.

Within many of the hazards listed in this International Standard there are three performance levels:

— Level 1 to indicate exposure to perceived low risk;

— Level 2 to indicate exposure to perceived medium risk;

— Level 3 to indicate exposure to perceived high risk.

For protection against extreme exposures to radiant heat, there is a fourth performance level to take into account high performance materials such as aluminized and similar materials. The level of personal protection to be provided is based on the outcome of the risk assessment and some comments on risk assessment are given in Annex E.

In this International Standard, an informative annex on ergonomic features (Annex D) is included in the form of guidelines. Suitable tests for these requirements have not yet been validated internationally.

For complete protection against exposure to heat and/or flame, it is probable that it will be necessary to protect the head, face, hands and/or feet with suitable PPE and in some cases, appropriate respiratory protection might also be considered necessary.

Attention is drawn to CEN Technical Report CEN/TR 14560:2004 [1], which sets out guidelines for selection, use, care and maintenance of protective clothing against heat and flame.

Nothing in this International Standard is intended to restrict any jurisdiction, purchaser or manufacturer from exceeding these minimum requirements. It is one of several standards for clothing that have been developed to protect persons against heat and/or flames. Other standards include:

— ISO 11611, *Protective clothing for use in welding and allied processes*;

— ISO 11613, *Protective clothing for firefighters — Laboratory test methods and performance requirements*;

— ISO 14460, *Protective clothing for automobile racing drivers — Protection against heat and flame — Performance requirements and test methods*;

— ISO 15384, *Protective clothing for firefighters — Laboratory test methods and performance requirements for wildland firefighting clothing*;

— ISO 15538, *Protective clothing for firefighters — Laboratory test methods and performance requirements for protective clothing with a reflective outer surface*;

— EN 469, *Protective clothing for firefighters — Performance requirements for protective clothing for firefighting*;

— EN 1486, *Protective clothing for fire-fighters — Test methods and requirements for reflective clothing for specialised fire fighting*;

— EN 13911, *Protective clothing for firefighters — Requirements and test methods for fire hoods for firefighters*;

— EN 15614, *Protective clothing for firefighters — Laboratory test methods and performance requirements for wildland clothing*.

Protective clothing — Clothing to protect against heat and flame

1 Scope

This International Standard specifies performance requirements for garments made from flexible materials, which are designed to protect the wearer's body, except the hands, from heat and/or flame. For protection of the wearer's head and feet, the only items of protective clothing falling within the scope of this International Standard are gaiters, hoods and overboots. However, concerning hoods, requirements for visors and respiratory equipment are not given.

The performance requirements set out in this International Standard are applicable to garments which could be worn for a wide range of end uses, where there is a need for clothing with limited flame spread properties and where the user can be exposed to radiant or convective or contact heat or to molten metal splashes.

This International Standard is not applicable to protective clothing that is specified by other International Standards, such as for firefighting in structures and for use in welding and allied processes.

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.

ISO 3071, *Textiles — Determination of pH of aqueous extract*

ISO 3376:2002, *Leather — Physical and mechanical tests — Determination of tensile strength and percentage extension*

ISO 3377-1, *Leather — Physical and mechanical tests — Determination of tear load — Part 1: Double edge tear*

ISO 4045, *Leather — Chemical tests — Determination of Ph*

ISO 4048, *Leather — Chemical tests — Determination of matter soluble in dichloromethane and free fatty acid content*

ISO 5077, *Textiles — Determination of dimensional change in washing and drying*

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 7000, *Graphical symbols for use on equipment — Index and synopsis*

ISO 9151, *Protective clothing against heat and flame — Determination of heat transmission on exposure to flame*

ISO 9185, *Protective clothing — Assessment of resistance of materials to molten metal splash*

ISO/TR 11610, *Protective clothing — Vocabulary*

ISO 12127:1996, *Clothing for protection against heat and flame — Determination of contact heat transmission through protective clothing or constituent materials*

ISO 13506, *Protective clothing against heat and flame — Test method for complete garments — Prediction of burn injury using an instrumented manikin*

ISO 13688, *Protective clothing — General requirements*

ISO 13934-1, *Textiles — Tensile properties of fabrics — Part 1: Determination of maximum force and elongation at maximum force using the strip method*

ISO 13935-2, *Textiles — Seam tensile properties of fabrics and made-up textile articles — Part 2: Determination of maximum force to seam rupture using the grab method*

ISO 13937-2, *Textiles — Tear properties of fabrics — Part 2: Determination of tear force of trouser-shaped test specimens (Single tear method)*

ISO 13938-1, *Textiles — Bursting properties of fabrics — Part 1: Hydraulic method for determination of bursting strength and bursting distension*

ISO 15025, *Protective clothing — Protection against heat and flame — Method of test for limited flame spread*

ISO 17075, *Leather — Chemical tests — Determination of chromium(VI) content*

ISO 17493, *Clothing and equipment for protection against heat — Test method for convective heat resistance using a hot air circulating oven*

EN 343:2003, *Protective clothing — Protection against rain*

3 Terms and definitions

For the purposes of this document, the terms and definitions in ISO/TR 11610 and the following apply.

3.1
ageing
changing of the product performance over time during use or storage

NOTE Ageing is caused by a combination of several factors, such as:

— cleaning, maintenance or disinfecting processes;

— exposure to visible and/or ultra-violet radiation;

— exposure to high or low temperatures or to changing temperatures;

— exposure to chemicals including humidity;

— exposure to biological agents such as bacteria, fungi, insects or other pests;

— exposure to mechanical action such as abrasion, flexing, pressure and strain;

— exposure to contaminants such as dirt, oil, splashes of molten metal, etc.;

— exposure to wear and tear.

3.2
cleaning
process by which a PPE is made again serviceable and/or hygienically wearable by removing any dirt or contamination

NOTE A cleaning cycle is typically a washing plus drying or a dry cleaning treatment followed, if required, by ironing or finishing.

