SLOVENSKI STANDARD
SIST EN 13034:2005+A1:2009

01-julij-2009

Varovalna obleka pred uļ inki tekoļ ih kemikalij - Zahteve za izdelavo oblaļ il za zaġļ ito pred kemikalijami, ki nudijo omejeno zaġļ ito pred tekoļ imi kemikalijami (oprema tipa 6 in tipa PB [6])

Protective clothing against liquid chemicals - Performance requirements for chemical protective clothing offering limited protective performance against liquid chemicals (Type 6 and Type PB [6] equipment)

Schutzkleidung gegen flüssige Chemikalien - Leistungsanforderungen an Chemikalienschutzkleidung mit eingeschränkter Schutzleistung gegen flüssige Chemikalien (Ausrüstung Typ 6 und Typ PB [6])

Vêtements de protection contre les produits chimiques liquides - Exigences relatives aux vêtements de protection chimique offrant une protection limitée contre les produits chimiques liquides (équipement de type 6)

Ta slovenski standard je istoveten z: **EN 13034:2005+A1:2009**

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Protective clothing against liquid chemicals - Performance requirements for chemical protective clothing offering limited protective performance against liquid chemicals (Type 6 and Type PB [6] equipment)

Vêtements de protection contre les produits chimiques liquides - Exigences pour les vêtements de protection chimique offrant une protection limitée contre les produits chimiques liquides équipement du Type 6 et du Type PB [6])

Schutzkleidung gegen flüssige Chemikalien - Leistungsanforderungen an Chemikalienschutzkleidung mit eingeschränkter Schutzleistung gegen flüssige Chemikalien (Ausrüstung Typ 6 und Typ PB [6])

This European Standard was approved by CEN on 14 February 2005 and includes Amendment 1 approved by CEN on 5 April 2009.

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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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Foreword

This document (EN 13034:2005+A1:2009) 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 November 2009, and conflicting national standards shall be withdrawn at the latest by November 2009.

This document includes Amendment 1, approved by CEN on 2009-04-05.

This document supersedes EN 13034:2005.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ⟨A1⟩ ⟨A1⟩.

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.

For relationship with EU 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 United Kingdom.

Introduction

Protection should be proportional to the risk to avoid excessive discomfort due to overprotection. The categorisation into types of chemical protective clothing is an attempt to discriminate between different general levels of risk.

The determination of the actual risk level should follow from a risk assessment, which takes all relevant parameters into account, e.g. the nature of the chemical, temperature, pressure, quantity, parts of the body likely to be exposed, climatic conditions, intensity of work etc. This risk assessment will give important indications about suitable types of materials, clothing design and composition of the most effective solution, e.g. combination with other types of PPE or other items of chemical protective clothing.

Type 6 and PB [6] are intended to be used in cases where risk has been assessed as low and a full liquid permeation barrier is not necessary, i.e. when wearers are able to take timely adequate action when their clothing is contaminated. Type 6 and PB [6] protective clothing form the lowest level of chemical protection and are intended to protect from a potential exposure to small quantities of spray or accidental low volume splashes.

A technical report to give guidance on questions pertaining to selection, use, care and maintenance is currently under development.

1 Scope

This document specifies the minimum requirements for limited use and re-useable limited performance chemical protective clothing. Limited performance chemical protective clothing is intended for use in cases of a potential exposure to a light spray, liquid aerosols or low pressure, low volume splashes, against which a complete liquid permeation barrier (at the molecular level) is not required.

This document covers both chemical protective suits (Type 6) and partial body protection (Type PB [6]).

Chemical protective suits (Type 6) cover and protect at least the trunk and the limbs, e.g. one-piece coveralls or two piece suits, with or without hood, boot-socks or boot-covers. This document specifies minimum requirements for the connections between different parts of Type 6 suits by the use of a reduced whole suit spray test using a variant of A1⟩ EN ISO 17491-4 ⟨A1, as described in 5.2.

Partial body protection of similar limited performance (Type PB [6]) covers and protects only specific parts of the body, e.g. coats, aprons, sleeves etc. They should not be tested to the whole suit test (5.2).

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 340:2003, *Protective clothing — General requirements*

A1⟩ *deleted text* ⟨A1

EN 14325:2004, *Protective clothing against chemicals — Test methods and performance classification of chemical protective clothing materials, seams, joins and assemblages*

EN 23758, *Textiles - Care labelling code using symbols (ISO 3758:1991)*

EN 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 13935-2:1999)*

A1⟩ EN ISO 17491-4, *Protective clothing – Test methods for clothing providing protection against chemicals – Part 4: Determination of resistance to penetration by a spray of liquid (spray test) (ISO 17491-4:2008)* ⟨A1

3 Terms and definitions

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

3.1
aerosol
suspension of solid, liquid or solid and liquid particles in a gaseous medium having negligible falling velocity (generally considered to be less than 0,25 m/s)

3.2
chemical protective clothing material
any material or combination of materials used in an item of protective clothing for the purpose of isolating parts of the body from direct contact with a chemical

3.3
join
non-permanent fastening between two different garments, or between chemical protective clothing and accessories

3.4
seam
permanent fastening between two or more pieces of chemical protective clothing material

3.5
assemblage
permanent fastening between two or more different garments, or between chemical protective clothing and accessories, obtained e.g. by sewing, welding, vulcanising or gluing

3.6
closure
device, e.g. a zipper, a touch-and-close fastener etc., to close openings for the donning of protective clothing

3.7
chemical protective suit (or whole suit)
clothing worn to protect against chemicals, that covers at least trunk, arms and legs and where various types of additional protection e.g. hood or helmet, boots and gloves may be joined with. Several garments may be combined to provide the desired level of protection

3.8
partial body protection
protective clothing item worn to protect one or more parts of the body, which are particularly exposed to the risk. Partial body protection may be used separately or in combination with other garments to increase the protection level of specific parts of the body. Examples of partial body protection are sleeves, aprons and laboratory coats

3.9
limited use protective clothing
clothing intended for limited wear life usage (single use or limited re-use according to the manufacturer's instructions), i.e. to be worn until hygienic cleaning becomes necessary or until disposal is required after chemical contamination

3.10
re-usable chemical protective clothing
clothing intended to be re-used after the necessary reprocessing steps, such as e.g. hygienic cleaning, decontamination, or reapplication of repellent treatments, whilst still providing adequate protection

3.11
penetration
process by which chemicals and/or micro-organisms move through porous materials, seams, pinholes and other imperfections of a material on a non-molecular level

4 Performance requirements for materials, seams joins and assemblages

4.1 Materials

Chemical protective clothing materials shall be tested and classified in accordance with Table 1 (see also EN 14325:2004, Clause 4).

If not otherwise specified in the test methods, at least five specimens shall be tested for each property. The lowest individual value shall be calculated and used to describe the performance level.

Pre-conditioning and conditioning shall be carried out in accordance with EN 14325:2004, 4.2 and 4.3, as required. Manufacturer's instructions with regard to number of cleaning cycles, cleaning procedures and possible reapplication of treatments shall be observed.

For all requirements, except for liquid penetration and repellency, at least performance level 1 shall be obtained.

For liquid repellency a performance level 3 shall be obtained for at least one of the chemicals referred to in EN 14325:2004, Clause 4.

For resistance to penetration by liquids a performance level of at least 2 shall be obtained for at least one of the chemicals referred to in EN 14325:2004, Clause 4.

Table 1 — Test requirements

Clause in EN 14325:2004	Performance requirement
4.4	Abrasion resistance
4.7	Tear resistance (trapezoidal test specimen)
4.9	Tensile strength
4.10	Puncture resistance
4.12	Liquid repellency
4.13	Resistance to penetration by liquids
[A1] *deleted text* [A1]	

If a material does not provide a clearly measurable test result for any of the requirements in Table 1, "not applicable" shall be marked in both the test report and in the manufacturer's information. The reason why the test could not be applied or completed, shall be indicated, e.g. that the elasticity of the specimen prevents to determine an end-point in the puncture resistance test.

Materials shall be known not to cause skin irritation or have any adverse effect to health (see EN 340:2003, 4.2).

[A1] NOTE 1 [A1]The material of construction should be as light and as flexible as possible in order to ensure wearer comfort as well as providing effective protection. Material properties are only one element for the determination of wearer comfort of protective clothing. Design features of the clothing may have a more important influence on wearer comfort than material properties.

[A1] NOTE 2 If resistance to heat and flame is required, the chemical protective clothing should be tested and marked according to the appropriate standard. [A1]

4.2 Seams, joins and assemblages

4.2.1 Resistance to penetration by liquids

The construction of seams shall prevent penetration of liquid through stitch holes or through other components of a seam and not obstruct run-off of the liquid.

The requirements of this clause apply to the seams, joins and assemblages of the whole garment up to and including component parts, such as gloves or boots, which are integral to the garment.

For type 6 suits the result of the whole suit spray test (see 5.2) should also be considered as it gives an indication of the resistance to liquid penetration of seams, joins and assemblages.