SLOVENSKI STANDARD
SIST EN 14325:2018/oprA1:2023

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Varovalne obleke pred kemikalijami - Preskusne metode in zahteve za razvrščanje materialov za izdelavo varovalnih oblek, šivanje, spajanje in sestavljanje - Dopolnilo A1

Protective clothing against chemicals - Test methods and performance classification of chemical protective clothing materials, seams, joins and assemblages

Schutzkleidung gegen Chemikalien - Prüfverfahren und Leistungseinstufung für Materialien, Nähte, Verbindungen und Verbünde

Habillement de protection contre les produits chimiques - Méthodes d'essai et classification de performance des matériaux, coutures, jonctions et assemblages des vêtements de protection chimique

Ta slovenski standard je istoveten z: **EN 14325:2018/prA1**

ICS:

13.340.10	Varovalna obleka	Protective clothing

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EUROPEAN STANDARD

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ICS

English Version

Protective clothing against chemicals - Test methods and performance classification of chemical protective clothing materials, seams, joins and assemblages

Habillement de protection contre les produits chimiques - Méthodes d'essai et classification de performance des matériaux, coutures, jonctions et assemblages des vêtements de protection chimique

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This draft amendment is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 162.

This draft amendment A1, if approved, will modify the European Standard EN 14325:2018. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

This draft amendment was established by CEN 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-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (EN 14325:2018/prA1:2022) 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 document is currently submitted to the CEN Enquiry.

1 Modification to Clause 2, Normative references

Modify the following reference

EN ISO 9073-4:1997, *Textiles — Test methods for nonwovens — Part 4: Determination of tear resistance (ISO 9073-4:1997)*

by:

EN ISO 9073-4:2021, *Textiles — Test methods for nonwovens — Part 4: Determination of tear resistance (ISO 9073-4:2021)*

2 Modification to 4.4.2.1, General

Replace second and third paragraphs:

"There are three methods of leak tightness assessment, the pressure pot, the hydrostatic head and visual inspection. The pressure pot shall be used if possible, but if not possible, the hydrostatic head test is preferred. Alternatively, visual inspection shall be performed, if neither pressure pot nor hydrostatic head test is performed. In this latter case, this shall be reported in the test report and also in the Instructions for Use indicating that the visual inspection is qualitative and does not provide evidence of liquid tightness after abrasion. If the assessment is performed through visual inspection, the maximum classification that can be claimed is a Class 3.

Wherever possible the pressure pot method shall be used."

by:

"There are three methods of leak tightness assessment, the pressure pot, the hydrostatic head and visual inspection.

- The pressure pot shall be used for materials holding the pressure according to 4.4.2.2.
- The hydrostatic head shall be used for air permeable materials which cannot hold the pressure according to 4.4.2.2, but can be tested according to 4.4.2.3.

  NOTE 1 When evidence is presented that air permeable materials cannot hold the pressure according to 4.4.2.2, this does not need to be re-confirmed.

- Visual inspection is permitted when the material does not permit either of the above quantitative assessment methods in this subclause to be performed. In this case, this shall be reported in the test report and also in the Instructions for Use indicating that the visual inspection is qualitative and does not provide evidence of liquid tightness after abrasion. If this assessment is performed through visual inspection, the maximum classification that can be claimed is a Class 3.

  NOTE 2 When evidence is presented that neither of the above two quantitative assessment methods in this subclause can be performed due to the nature of the material, this does not need to be re-confirmed."

3 Modification to 4.4.2.2, Pressure pot end-point determination

Replace second sentence in 1st paragraph:

"Preferably the specimen's exterior face of the fabric shall not be exposed to the pressure, if this is not possible then reverse the face of the fabric prior to reverting to testing using the hydrostatic head."

by:

"Preferably the specimen's exterior face of the fabric shall not be exposed to the pressure; if this is not possible then reverse the face of the fabric."

4 Modification to 4.4.2.3, Hydrostatic head end-point determination

Replace second and third paragraphs:

"The end point, i.e. the highest number of abrasion rubs which does not cause damage to the material, shall be determined by the measurement of hydrostatic head method according to EN 20811 using a rate of increase in pressure of (0,98 ± 0,05) kPa/min (or 10 cm/min). The hydrostatic head of the specimens of the set of four test specimens prior to any abrasion shall be measured and the average hydrostatic head for this set calculated. If the average hydrostatic head exceeds 200 mm, then the hydrostatic head method is applicable and the leak tightness shall be determined as follows:

For each test specimen, the tested area of the abraded specimen is clamped into the hydrostatic test apparatus and the hydrostatic head measured. If the average hydrostatic head of the specimens of a set of test specimens exceeds 200 mm, a new set of specimens shall be abraded to a higher level of number of rubs according to the levels of numbers of rubs in Table 1, until the level is reached at which the average hydrostatic head is less than 200 mm. The highest level of number of rubs, at which the average hydrostatic head is still above 200 mm, shall be used for the performance classification."

by:

"The end point, i.e. the highest number of abrasion rubs which does not cause damage to the material, shall be determined by the measurement of hydrostatic head method according to EN 20811 using a rate of increase in pressure of (0,98 ± 0,05) kPa/min (or 10 cm/min). The hydrostatic head of the specimens of the set of four test specimens (prior to any abrasion) shall be measured and in order for this test method to be applicable, the hydrostatic head for each of the four test specimens shall be above 200 mm

For each test specimen after abrasion, the tested area of the abraded specimen is clamped into the hydrostatic test apparatus and the hydrostatic head measured. If the hydrostatic head of all the specimens in a set of four test specimens exceeds 200 mm, a new set of specimens shall be abraded to a higher number of rubs according to the levels of numbers of rubs in Table 1, until the level is reached at which the hydrostatic head of any of the four specimens is less than 200 mm. The highest level of number of rubs, at which hydrostatic head of the set of all test specimens is still above 200 mm, shall be used for the performance classification."

5 Modification to 4.4.2.4, Visual inspection end-point determination

Replace first sentence in 1st paragraph:

"Materials, not assessed by the pressure pot or with a hydrostatic head prior to abrasion, shall be assessed by visual inspection"

by:

"Visual inspection is permitted when the nature of the material does not permit the end point assessment to be performed by neither the pressure pot, nor hydrostatic head, as defined by 4.4.2.1."

6 Modification to 4.5.2.1, General

Replace second paragraph:

"There are three methods of leak tightness assessment, the pressure pot, the hydrostatic head and visual inspection. The pressure pot shall be used if possible, but if not possible, the hydrostatic head test is preferred. Alternatively, visual inspection shall be performed, if neither pressure pot nor hydrostatic head test is performed. In this latter case, this shall be reported in the test report and also in the Instructions for Use indicating that the visual inspection is qualitative and does not provide evidence of liquid tightness after flex cracking. Visual inspection shall not be used for the performance classification of Type 1 through Type 3 (EN 943-1, EN 943-2, EN 14605). Wherever possible the pressure pot method shall be used, the specimen shall be clamped in a rectangular test pot apparatus, designed according to

the specifications given in Annex E (see Figure E.2), with the rectangular dimensions appropriate to hold the test specimen."

by:

"There are three methods of leak tightness assessment, the pressure pot, the hydrostatic head and visual inspection.

- The pressure pot shall be used for materials holding the pressure according to 4.5.2.2.
- The hydrostatic head shall be used for air permeable materials which cannot hold the pressure according to 4.5.2.2, but can be tested according to 4.5.2.3.

  NOTE 1 When evidence is presented that air permeable materials cannot hold the pressure according to 4.5.2.2, this does not need to be re-confirmed.

- Visual inspection is permitted when the nature of the material does not permit either of the above quantitative assessment methods in this subclause to be performed. In this case, this shall be reported in the test report and also in the Instructions for Use indicating that the visual inspection is qualitative and does not provide evidence of liquid tightness after flex cracking. Visual inspection shall not be used for the performance classification of Type 1 through Type 3 (EN 943-1, EN 943-2, EN 14605).

  NOTE 2 When evidence is presented that neither of the above requirements in this subclause can be met, these do not need to be re-confirmed.

The specimen shall be clamped in a rectangular test pot apparatus, designed according to the specifications given in Annex E (see Figure E.2), with the rectangular dimensions appropriate to hold the test specimen."

7 Modification to 4.5.2.3, Hydrostatic head end-point determination

Replace first and second paragraph:

"The end point, i.e. the number of flexing cycles which cause compression-folding damage to the material, shall be determined by the measurement of hydrostatic head method according to EN 20811 using a rate of increase in pressure of (0,98 ± 0,05) kPa/min (or 10 cm/min). The hydrostatic head of the specimens of the set of the six test specimens prior to any flexing shall be measured and the average hydrostatic head for this set calculated. If the average hydrostatic head exceeds 200 mm, then the hydrostatic head method is applicable: and the leak tightness shall be determined as follows:

For each test specimen, the tested area of the flexed specimen is clamped into the hydrostatic test apparatus and the hydrostatic head measured. If the average hydrostatic head of the specimens of a set of test specimens exceeds 200 mm, a new set of specimens shall be flexed to a higher level of number of flexing cycles according to the levels of numbers of flexing cycles in Table 2, until the level is reached at which the average hydrostatic head is less than 200 mm. The highest level of number of cycles, at which the average hydrostatic head is still above 200 mm, shall be used for the performance classification."

By

"The end point, i.e. the number of flexing cycles which cause compression-folding damage to the material, shall be determined by the measurement of hydrostatic head method according to EN 20811 using a rate of increase in pressure of (0,98 ± 0,05) kPa/min (or 10 cm/min). The hydrostatic head of the specimens of the set of the six test specimens prior to any flexing shall be measured and in order for this assessment test method to be applicable, the hydrostatic head for each of the six test specimens shall be above 200 mm.

For each test specimen, after flexing, the tested area of the flexed specimen is clamped into the hydrostatic test apparatus and the hydrostatic head measured. If the hydrostatic head of all the specimens in a set of six test specimens exceeds 200 mm, a new set of specimens shall be flexed to a number of flexing cycles according to the levels of numbers of flexing cycles in Table 2, until the level is reached at which the hydrostatic head of any of the six specimens is less than 200 mm. The highest level of number of cycles, at which the hydrostatic head of the set of all test specimens is still above 200 mm, shall be used for the performance classification."

8 Modification to 4.5.2.4, Visual inspection end-point determination

Replace first sentence in 1st paragraph:

"Materials, not assessed by the pressure pot or with a hydrostatic head prior to flexing shall be assessed by visual inspection."

by:

"Visual inspection is permitted when the nature of the material does not permit the end point assessment to be performed by neither the pressure pot nor hydrostatic head as defined by 4.5.2.1."

9 Modification to 4.7, Trapezoidal tear resistance

Replace fourth and fifth sentence in 1st paragraph:

"The force applied to each specimen shall be recorded as the average of load peaks. A peak shall be defined as a gradient drop of 10 %. If there is no peak, the force shall be the maximum force observed when the sample has been displaced by 64 mm from its starting position."

by:

"The force applied to each specimen shall be recorded as arithmetic mean of the maximum force of specimens is taken as the result of testing. Maximum force is taken as the result of individual specimen, and round it to the nearest 0,1 N. Calculate the arithmetic mean of the maximum force of the five specimens in both the machine and cross-machine directions respectively, round the arithmetic mean to the nearest 0,1 N, the results are expressed as the arithmetic means."

10 Modification to Annex B, Abrasive paper

Replace B.1.1, B.1.2 and B.1.3:

"**B.1.1 Abrasive**

The abrasive used shall be of grit A65 (APEX or Structured Abrasive) or 240 (ANSI or CAMI USA).

B.1.2 Backing

The backing shall be B weight paper and shall have minimum breaking strength 390 N (MD) and 215 N (CD) measured according to EN ISO 13934-1.

B.1.3 Adhesive

The adhesive, which may be water soluble, shall be of good quality, suitable for the purpose.

NOTE 1 The abrasive paper of reference is Trizact A65 from 3M available on the following website in Europe http://www.abrasivesformetal.co.uk/Trizact-Grip-Backed-Velcro-Type-Discs.aspx, has been found to be suitable. Any other abrasive paper giving the same results can also be used.

NOTE 2 It has been found to be suitable that the paper is supplied in form of sheets (230 ± 2) mm by (280 ± 3) mm or in form of rolls."

by:

"**B.1.1 Abrasive**

The abrasive used shall be of grit A65 (APEX or Structured Abrasive).

B.1.2 Backing

The backing shall have minimum breaking strength such as to withstand the rigours of the Martindale test method.

B.1.3 Adhesive

The adhesive shall be of good quality, suitable for the purpose.

NOTE 1 The abrasive paper of reference is Trizact A65 from 3M is available on the following website in Europe http://www.abrasivesformetal.co.uk/Trizact-Grip-Backed-Velcro-Type-Discs.aspx."

11 Modification to Annex E, Specification for pressure pot and leak-tightness of equipment

Replace E.2.2:

"**E.2.2 For abrasion specimens**

The total volume contained in the pressure pot cell (about 825 cm^3 to 900 cm^3), pressure measuring device and piping, etc. shall be 1000^{+0}_{-50} cm^3."

by:

"**E.2.2 For abrasion specimens**

The total volume contained in the pressure pot cell (about 475 cm^3), pressure measuring device and piping, etc. shall be 570^{+0}_{-50} cm^3."