



SLOVENSKI STANDARD
SIST EN 1876-1:1999
01-marec-1999

Gumirane in plastificirane tekstilije - Nizkotemperaturni preskusi - 1. del: Upogibni preskus

Rubber- or plastics-coated fabrics - Low-temperature tests - Part 1: Bending test

Mit Kautschuk oder Kunststoff beschichtete Textilien - Prüfungen bei niedrigen Temperaturen - Teil 1: Biegeversuch

Supports textiles revetus de caoutchouc ou de plastique - Essais a basse température - Partie 1: Essai de pliage

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Ta slovenski standard je istoveten z: **EN 1876-1:1997**

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ICS:

59.080.40 Ú[ç!zã •\ [Á!^ç|^ ^} ^ Coated fabrics
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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 1876-1

October 1997

ICS 59.080.40

Descriptors: textiles, coated fabrics, fabrics coated with rubber, fabrics coated with plastics, tests, low temperature tests, bend tests

English version

Rubber- or plastics-coated fabrics - Low-temperature tests - Part 1: Bending test

Supports textiles revêtus de caoutchouc ou de plastique -
Essais à basse température - Partie 1: Essai de pliage

Mit Kautschuk oder Kunststoff beschichtete Textilien -
Prüfungen bei niedrigen Temperaturen - Teil 1:
Biegeversuch

This European Standard was approved by CEN on 26 September 1997.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 248 "Textiles and textile products", the secretariat of which is held by BSI.

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 April 1998, and conflicting national standards shall be withdrawn at the latest by April 1998.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

This European Standard is being prepared in the following Parts:

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Part 1 Bending test

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Part 2 Impact test

[0bee75bed616/sist-en-1876-1-1999](#)



Introduction

The determination of the low temperature properties of rubber- or plastics- coated fabrics is important for many applications.

This standard describes two methods: a method by bending that constitutes Part 1 and a method that deals with an impact on the material in the form of a loop and which constitutes Part 2.

The method to be employed should be chosen by those concerned in order to match as closely as possible the conditions likely in use. The results of these two methods are not equivalent and therefore should not be compared.

NOTE Persons using this standard should be familiar with normal laboratory practice. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

The method is technically equivalent to ISO 4675.

1 Scope

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This standard describes a means of determining the ability of coated fabrics to resist the effect of low temperatures when subjected to bending at specified temperatures after defined periods of exposure. <https://standards.iteh.ai/catalog/standards/sist/c8ea36ed-0c4f-47dd-8f10-0bee75bed616/sist-en-1876-1-1999>

It is applicable to coated fabrics that fall within the thickness range 0,10 mm to 2,20 mm.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to the this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

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|-------------|---|
| EN ISO 2231 | Rubber- or plastics-coated fabrics - Standard atmospheres for conditioning and testing. |
| EN 22286 | Rubber- or plastics-coated fabrics - Determination of roll characteristics. |

3 Principle

Conditioned test pieces are exposed in a cold chamber for a specified time. The test pieces are then subjected to a bend test using an appropriate apparatus and examined visually under low magnification.

4 Apparatus

4.1 Cold chamber in which the test pieces are exposed to low temperature, sufficient in size to contain the bending fixture used for testing the test pieces and to permit the operation of the fixture to bend the test piece without removal from the chamber.

It shall circulate cold air or any other suitable gas in such a way that a uniform atmosphere at specified temperatures to within a tolerance of ± 1 °C will be maintained.

4.2 Bending jig for bending test pieces, as shown in figures 1 and 2.

Mass tolerance and dimensions shall be as specified in figure 2.

4.3 Glass plates of sufficient number, having dimensions of approximately 125 mm x 175 mm x 3 mm for use when conditioning all test pieces.

4.4 Gloves for handling test pieces within the cabinet and which shall be exposed to the same temperature as the test pieces. A second pair of gloves at room temperature shall be available for wearing within the cold gloves as protection for the operator.

5 Test pieces

5.1 Selection

Test pieces shall be taken from an area with no functional or visible flaw and shall be located within the full length of the coated fabric and its usable width as defined in EN 22286.

5.2 Dimensions and quantity

Three test pieces 25 mm x 100 mm shall be cut with the longer dimension in the longitudinal dimension of the roll.

6 Conditioning of test pieces

Immediately prior to testing, condition the test pieces for at least 16 h in the appropriate atmosphere in accordance with EN ISO 2231.

7 Procedure

7.1 Place the three conditioned test pieces between glass plates (4.3) with sufficient space between each test piece to permit the passage of air during the conditioning period. Place the glass plates with the test pieces held in position, the bending jig (4.2) and the cold gloves (4.4) in the cold chamber (4.1). Unless otherwise specified, expose them for 4 h to the specified temperature.

NOTE Longer exposure periods should be used when examining the effects of crystallisation or plasticizer migration at specified test temperatures.

7.2 At the termination of the exposure period and while still in the chamber, remove the test pieces from between the glass plates one at a time (see note below). Within 30 s of the removal place them in the bending jig with the flexing plate held in the open position by the trigger pin. Unless otherwise specified, in the case of substrates coated on one side only, place the coated side away from the mandrel. In the case of double-coated fabrics either or both surfaces may be evaluated unless otherwise specified.

NOTE : It is important to wear gloves at all times when handling test pieces prior to carrying out the bend test.

7.3 As soon as the test piece is in position in the bending jig, release the trigger and permit the flexing plate to make a free fall. Remove the test pieces from the jig.

NOTE: When materials greater than 2,2 mm in thickness are to be tested, it may be necessary to increase the mass of the steel top bar G (see figure 2) and increase the clearance between the back plate and the mandrel to enable the specimen to be inserted. In this case the deviation should be reported in the test report.

7.4 After all the test pieces have been tested, remove them, allow to recover to room temperature, then examine for fractures or cracks in their coating under a magnification factor of 4 to 6. During the examination, fold all test pieces through 180 ° in the same direction as the bend during test.

8 Assessment of damage

8.1 Examination

Examine all three test pieces and where damage has occurred assess using the procedures in 8.2 to 8.4.

Alternatively, the method may be used to determine cold bend temperature or compliance with a performance specification. If this is the case, see clause 9.

8.2 Depth of crack

If there is no cracking, record 'nil'.

Grade the cracking, if any, according to the following four-part scale of increasing severity from a) to d) :

- a) Surface or finish crack not exposing any cellular, middle layer or substrate;
- b) Cracking into, but not through the middle layer;
- c) Cracking through to the substrate or base fabric;
- d) Cracking completely through the material.

8.3 Number of cracks for the three test pieces

Record the number of cracks of greatest severity, up to 10. If there are more than 10, record 'over 10'.

8.4 Length of crack

Record the length in millimetres of the longest crack of greatest severity.

9 Interpretation of results (standards.iteh.ai)

Where the method is being used to determine cold bend temperature or compliance with a performance specification, it is necessary only to assess whether or not cracking has occurred at a given temperature.

If all three test pieces fracture or show cracks, the material has a cold bend temperature higher (warmer) than the test temperature. The material either fails or a re-test is necessary to more accurately determine the low temperature resistance to bending.

If for all three test pieces, the coating remains continuous, i.e. free from any fracture or coating cracks, the material shall be considered to either pass or have a cold bend temperature lower (colder) than the test temperature.

If only one or two test pieces show failure, test three additional test pieces. If any of these test pieces shows fracture or coating cracks, the material fails at the test temperature.

10 Test report

The test report shall include :

- a) The date of test;
- b) Reference to this European Standard;
- c) The description of the coated fabric;
- d) The thickness of the coating measured in accordance with EN 22286;
- e) The atmosphere used for conditioning before test;
- f) The temperature at which the test pieces were tested;
- g) The duration of the exposure period (if different from 4 h);
- h) The surface(s) tested;
- i) The severity of any cracking (8.1 to 8.3) or where appropriate that the material was free from cracking;
- j) Details of any deviations from this test procedure.

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