

SLOVENSKI STANDARD

SIST EN 12703:2016

01-oktober-2016

Nadomešča:
SIST EN 12703:2012

Lepila za papir in karton za embalažo ter za higienske proizvode za enkratno uporabo - Ugotavljanje upogibnosti pri nizkih temperaturah ali temperature loma lepilnega spoja v hladnem

Adhesives for paper and board, packaging and disposable sanitary products -
Determination of low temperature flexibility or cold crack temperature

iTeh STANDARD PREVIEW
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Klebstoffe für Papier, Verpackung und Hygieneprodukte - Bestimmung des
Kaltbruchverhaltens oder der Kaltbruchtemperatur

SIST EN 12703:2016
http://standards.itih.ai/catalogue/products/SIST/EN/12703/2016/551-881c801d0935/sist-en-12703-2016
Adhésifs pour papier, carton, emballage et produits sanitaires jetables - Détermination de
la flexibilité à basse température ou de la température de fissuration à froid

Ta slovenski standard je istoveten z: EN 12703:2016

ICS:

55.040	Materiali in pripomočki za pakiranje	Packaging materials and accessories
83.180	Lepila	Adhesives

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en,fr,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12703

August 2016

ICS 83.180

Supersedes EN 12703:2012

English Version

**Adhesives for paper and board, packaging and disposable
sanitary products - Determination of low temperature
flexibility or cold crack temperature**

Adhésifs pour papier, carton, emballage et produits
sanitaires jetables - Détermination de la flexibilité à
basse température ou de la température de fissuration
à froid

Klebstoffe für Papier, Verpackung und
Hygieneprodukte - Bestimmung des
Kaltbruchverhaltens oder der Kaltbruchtemperatur

This European Standard was approved by CEN on 6 May 2016.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

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European foreword

This document (EN 12703:2016) has been prepared by Technical Committee CEN/TC 193 “Adhesives”, the secretariat of which is held by AENOR.

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 February 2017, and conflicting national standards shall be withdrawn at the latest by February 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12703:2012.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Introduction

SAFETY STATEMENT — Persons using this document should be familiar with the normal laboratory practice, if applicable. This document 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 regulatory conditions.

ENVIRONMENTAL STATEMENT — It is understood that some of the material permitted in this standard may have negative environmental impact. As technological advantages lead to acceptable alternatives for these materials, they will be eliminated from this standard to the extent possible.

At the end of the test, the user of the standard should take care to carry out an appropriate disposal of the wastes, according to local regulation.

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1 Scope

This European Standard specifies a method to determine whether a film of adhesive of given dimensions will craze, crack or fracture at a specified temperature.

Alternatively, the temperature at which the film will craze, crack or fracture can be determined.

The method described can be used as a quality control test, or to compare the flexibility of adhesives at low temperatures.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 923, *Adhesives - Terms and definitions*

EN 1067, *Adhesives - Examination and preparation of samples for testing*

EN ISO 15605, *Adhesives - Sampling (ISO 15605:2000)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 923 apply.

4 Principle

An unsupported film of the adhesive, after conditioning, is bent through 180° over specified diameter cylindrical mandrel.

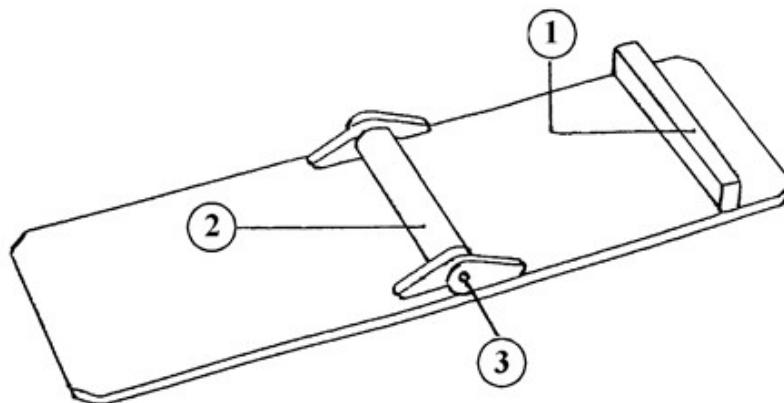
The test piece is then examined for signs of fracture, crazing or cracking.

The test may be carried out either as a pass/fail test or at successively lower temperatures until a failure occurs.

5 Apparatus

Specimens shall be conditioned for 24 h at 23 °C and 50 % RH.

5.1 Bend test apparatus, as shown in Figure 1. The mandrel shall be made of rigid and suitably corrosion-resistant material, e.g. stainless steel.



Key

- 1 stop of identical height to mandrel
- 2 mandrel
- 3 mandrel pin

Figure 1 — Bend test apparatus

The diameter of the mandrel shall be $(6,0 \pm 0,1)$ mm and the gap between the surface of the mandrel and the plates of the hinge shall be $(0,55 \pm 0,1)$ mm.

Other dimensions of the apparatus are not critical.

The mandrel shall be free to rotate on its pin and the apparatus shall be provided with a stop to ensure that when the test piece is bent, the two plates of the hinge are parallel.

5.2 Chamber, capable of maintaining a specified temperature to an accuracy of ± 2 °C throughout the test.

NOTE A suitable range of temperature for most purposes is -40 °C to $+20$ °C.

6 Test specimens

6.1 Sampling

The specimens shall be taken in accordance with EN ISO 15605 and prepared in accordance with EN 1067.

6.2 Dimensions

The thickness of the test specimens shall be $(0,4 \pm 0,1)$ mm but the other dimensions of the test specimens are not critical provided that the test specimen is rectangular and fits into the bend test apparatus. The test specimens shall be without visible flaws.

6.3 Preparation of the adhesive film

The adhesive film shall be $(0,4 \pm 0,1)$ mm thick and prepared by any suitable method.

7 Conditioning

Condition the specimens and test apparatus at the temperature at which the test is to be carried out for a minimum period of 4 h.

8 Procedure

8.1 Pass/fail test

Open fully the bend test apparatus (5.1) and insert a conditioned specimen under the mandrel so that one end is against the stop.

Close the apparatus in not less than 1 s and not more than 2 s thus bending the specimens around the mandrel through 180° (see Figures 1 and 2).

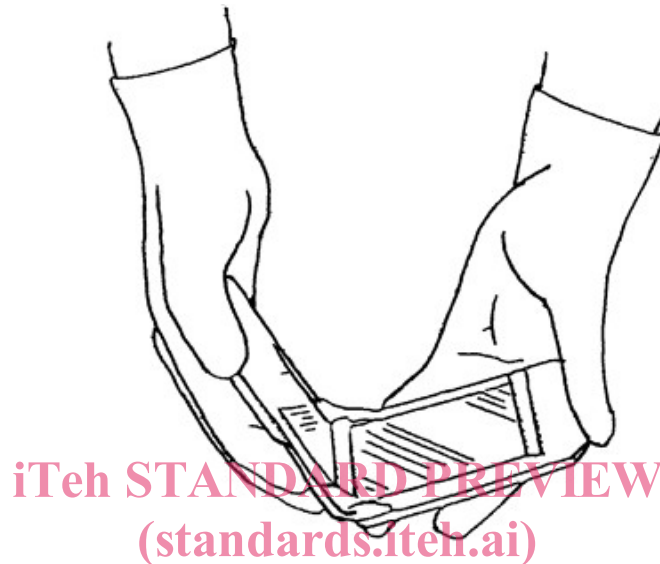


Figure 2 — Bend test apparatus in use

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Care should be taken not to affect the temperature of the specimen with the fingers. Tongs conditioned at the test temperature or cotton gloves should be used.

Preferably carry out the test in the chamber (5.2), but in any case ensure that warm air is excluded from the test specimen and mandrel while the test is carried out.

Carry out a series of five tests using different test specimens conditioning the mandrel before each test for an appropriate time to restore it to the test temperature.

Examine the test specimen for visible signs of crazing, cracking or fracture.

If any specimen shows signs of fracture, crazing or cracking, repeat the test.

8.2 Determination of cold crack temperature

Carry out the procedure described in 8.1 over a range of test temperatures at 5 °C intervals using a fresh set of five test specimens at each temperature.

NOTE It is advisable to carry out exploratory tests to determine the broad range within which the cold crack temperature lies.

If any test specimen shows signs of crazing, cracking or fracture, repeat the test.