



SLOVENSKI STANDARD
SIST EN 1895:2002
01-september-2002

Adhesives for paper and board, packaging and disposable sanitary products - 180° - "T" peel test for a flexible-to-flexible assembly

Klebstoffe für Papier, Verpackung und Hygieneprodukte - 180°-"T"-Schälprüfung für flexibel/flexibel geklebte Proben

Adhésifs pour papier et carton, emballage et produits sanitaires jetables - Essai de pelage en "T" a 180° pour un assemblage flexible sur flexible

STANDARD PREVIEW
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Ta slovenski standard je istoveten z: EN 1895:2001

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ICS:

83.180 Lepila Adhesives

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 1895

October 2001

ICS 83.180

English version

**Adhesives for paper and board, packaging and disposable
sanitary products – 180°-"T" peel test for a flexible-to-flexible
assembly**

Adhésifs pour papier et carton, emballage et produits
sanitaires jetables - Essai de pelage en "T" à 180° pour un
assemblage flexible sur flexible

Klebstoffe für Papier, Verpackung und Hygieneprodukte –
180°-"T"-Schälprüfung für flexibel/flexibel geklebte Proben

This European Standard was approved by CEN on 30 September 2001.

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 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 Management Centre 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.

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

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Foreword

This European Standard 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 April 2002, and conflicting national standards shall be withdrawn at the latest by April 2002.

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.

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EN 1895:2001 (E)**Introduction**

Peel testing for adhesive bonds is widely used for assessing the performance of adhesives and, because of the wide diversity of the flexibility of substrates which can be used, no single peel test will fulfil the requirements of all cases.

This European Standard is intended to test an assembly consisting of two flexible adherends.

“T” peel test can also be made in compliance with

EN 28510-1, Adhesives - Peel test for a flexible-bonded-to-rigid test specimen assembly - Part 1: 90° peel (ISO 8510-1:1990).

EN 28510-2, Adhesives - Peel test for a flexible-bonded-to-rigid test specimen assembly - Part 1: 180° peel (ISO 8510-2:1990).

1 Scope

This European standard specifies a 180° - "T" peel test for the determination, under specified conditions, of the peel resistance of a bonded assembly of two flexible adherends which may have an equal or different flexural modulus.

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 this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 923	<i>Adhesives - Terms and definitions.</i>
EN 1066	<i>Adhesives - Sampling.</i>
EN 1067	<i>Adhesives - Examination and preparation of samples for testing.</i>
EN ISO 10365	<i>Adhesives – Designation of main failure patterns (ISO 10365:1992).</i>
ISO 554	<i>Standard atmospheres for conditioning and/or testing – Specifications.</i>

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 923 and the following apply.

3.1 peel force

force required to separate progressively the two parts of a bonded test specimen of specified dimensions over the adherend surfaces under the specified conditions of test expressed in newtons

3.2

peel strength

force per units width necessary to bring an adhesive joint to the point of failure or to maintain a rate of failure by means of a stress applied in the peeling mode

NOTE the peel strength can be expressed as force per unit peel width.

[EN 923:1998, 2.7.16]

4 Principle

Adherends are separated at a controlled rate from an open edge of a prepared bond line so that the separation occurs progressively along the bond line.

For the "T" peel test for a flexible - to - flexible assembly, the force is applied to the unbonded ends of the test specimen.

The angle of the bond line to the direction of the applied force is uncontrolled.

5 Safety

Persons using this standard shall be familiar with normal laboratory practice.

This standard does not purport to address all safety problems, if any, associated with its use.

It is the responsibility of the user to establish safety and health practices and to ensure compliance with any European and national regulatory conditions.

6 Apparatus and material

6.1 Tensile testing machine, capable of supplying a tensile force with a constant rate of grip separation. The machine shall be equipped with a force-measuring system complete with an indicator and/or a recorder.

The indicated force shall not differ from the true applied force by more than 2%. The response time of the machine shall be short enough not to affect the accuracy with which the force applied at the time of rupture can be measured.

The force of rupture of the specimen shall lie in the range between 20% and 80% of the full-scale reading.

7 Test specimens

7.1 Sampling

Take a sample of the adhesive to be tested in accordance with EN 1066. Examine and prepare it for testing in accordance with EN 1067.

7.2 Adherends

NOTE The thickness, the flexibility and other surface characteristics of the adherends have an impact on the peel strength value.

The adherends shall each be of uniform thickness, preferably not more than 3 mm.

7.3 Preparation of test specimens

Test specimens should be capable of withstanding the expected tensile force and should be capable of being bent through the peeling angle without gross irreversible dimensional change.

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Apply the adhesives following the method recommended by the adhesive manufacturer.

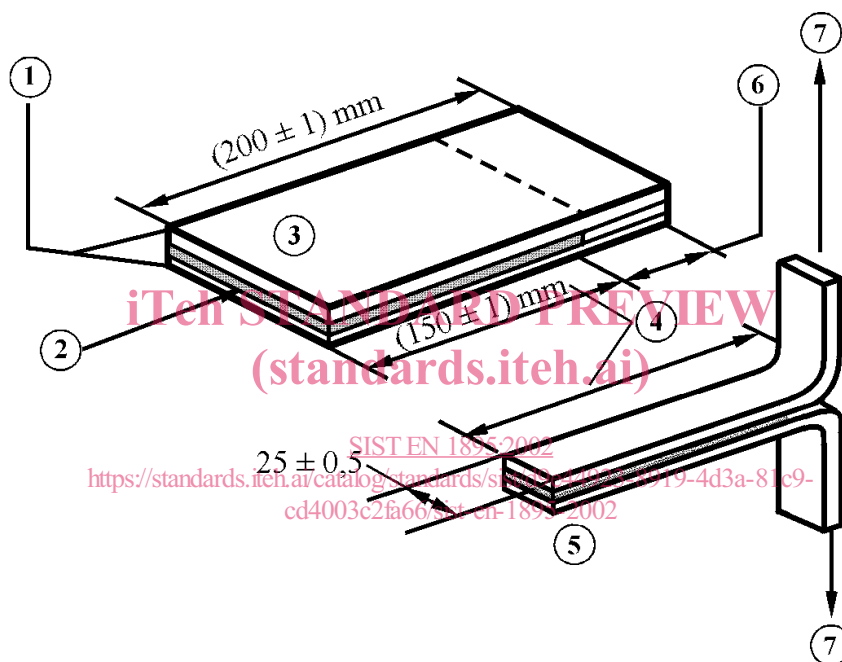
The application temperature of the adhesive and the pressure used to combine the adherends shall be specified in the test report.

The coating procedure, the coating mass of the adhesive and the bonding conditions should comply with the manufacturer recommendations and shall be reported.

Unless otherwise specified, 25 mm width test specimens, are cut from the bonded adherends.

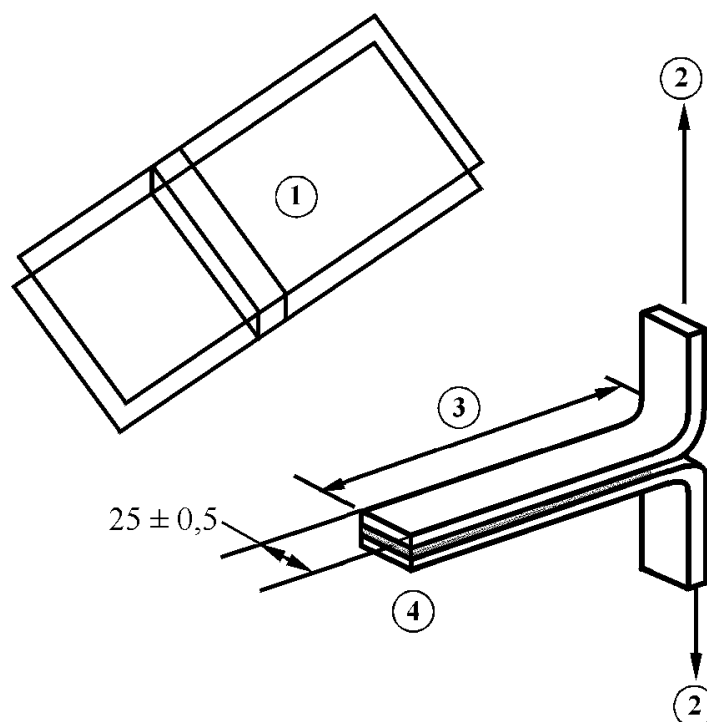
The choice of the type of bond: full coating (lamination) or bead/line application depends on the nature of the adherends (e. g. softness, flexibility), on the type of adhesive and on the final application (e. g. if substrates failure is expected, bead/line bonding can be used, if cohesive failure is expected full coating is recommended).

Dimensions in millimetres

**Key**

- | | |
|---|-------------------|
| 1 | Flexible adherend |
| 2 | Adhesive |
| 3 | Test panel |
| 4 | Bonded |
| 5 | Test piece |
| 6 | Unbonded |
| 7 | Direction of pull |

Figure 1 — Full coating



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Key

- 1 Test panel
- 2 Direction of pull
- 3 Bonded
- 4 Test piece

This test is appropriate for hot melt adhesives

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Figure 2 — Bead line

If a press is used to make the test specimens, it shall be capable of applying an even pressure over the entire bonded area and should preferably be fitted with a time release mechanism. In order to give a uniform distribution of pressure over the bonded area the platens of the press shall be parallel. Where this is impracticable, one platen shall be covered with a resilient pad.

The preparation procedure shall be such as to minimize variations and the use of a pneumatic or hydraulic press, hand or power operated, which can apply a pressure up to 1 N/mm^2 , is recommended.

7.4 Number of test specimens

The number of test specimens shall be recorded in the test report and shall not be less than five.