



**SLOVENSKI STANDARD**  
**SIST EN 1940:1997**  
**01-avgust-1997**

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**Samolepilni trakovi - Merjenje utržne trdnosti**

Self-adhesive tapes - Measurement of breaking strength

Klebebänder - Messung der Bruchkraft

Rubans auto-adhésifs - Mesure de la résistance a la rupture

**Ta slovenski standard je istoveten z: EN 1940:1996**

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EUROPEAN STANDARD

EN 1940

NORME EUROPÉENNE

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ICS 83.180

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English version

## Self adhesive tapes - Measurement of breaking strength

Rubans auto-adhésifs - Mesure de la résistance  
à la rupture

Klebebänder - Messung der Bruchkraft

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SIST EN 1940:1997  
REPUBLIKA SLOVENIJA  
MINISTRSTVO ZA ZNANOST IN TEHNOLOGIJO  
Urad RS za standardizacijo in meroslovje  
LJUBLJANA

SIST..... EN 1940 .....

PREVZET PO METODI RAZGLASITVE

-08- 1997

This European Standard was approved by CEN on 1996-01-14. 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.

The European Standards exist 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.

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# CEN

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

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

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## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 253 "Self-adhesive tapes" of which the secretariat is held by AFNOR.

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of an identical text or by endorsement, at the latest by August 1996, and conflicting national standards shall be withdrawn at the latest by August 1996.

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

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## 1 Scope

This standard specifies a method to measure the breaking strength of a self adhesive tape when it is subjected to a tensile force sufficient to cause it to break.

The breaking strength of adhesive tape is of value as an indication of its uniformity and quality, and its ability to withstand stresses during application and use.

The maximum width of adhesive tape tested by this method is 25 mm. For adhesive tapes of this width or less, the breaking strength measured corresponds to that as supplied commercially, with factory-cut edges.

For adhesive tapes wider than 25 mm, this test method provides for the adhesive tape to be cut down to 25 mm with a well-sharpened instrument. In such cases, because of the better cutting of the edges, the results can be higher than would be found on commercial tape.

## 2 Definition

For the purposes of this standard, the following definition applies :

**breaking strength** : The ability to resist breaking when subject to load under prescribed conditions.

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## 3 Principle

The method consists of holding the adhesive tape vertically by the two clamps of a tensile testing machine. A tensile test is carried out until the adhesive tape breaks.

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## 4 Apparatus

Tensile testing machine with the following characteristics :

- the force shall be indicated with a maximum error of 2 % ;
- the speed of the moveable clamp shall be 300 mm/min  $\pm$  30 mm/min ;
- the scale shall be such that the readings obtained are between 15 % and 85 % of the complete scale ;
- the clamps shall be serrated to prevent slipping or tearing of the adhesive tape ;
- if a pendulum machine is used, ensure that the pendulum can swing freely.

## 5 Test sample and test pieces

Condition the sample roll for 24 hours at 23 °C  $\pm$  2 °C and 50 %  $\pm$  5 % relative humidity.

Discard the 3 outer turns of adhesive tape from the roll.

Take from each roll 5 test pieces. Each test piece shall be 200 mm long and the same width as the adhesive tape.

For widths greater than 25 mm, a test piece 25 mm wide shall be cut longitudinally from the adhesive tape. Use a sharp knife to obtain clean-cut edges.

## 6 Procedure

6.1 The test shall be carried out at the standard conditions of  $23\text{ °C} \pm 2\text{ °C}$  and  $50\% \pm 5\%$  relative humidity.

6.2 Remove the test pieces radially from the roll at an approximate speed of 300 mm/s, then condition for a further 2 h in the standard test conditions in order to remove all strain and distortion due to unrolling.

6.3 Set the clamps 100 mm apart. Clamp the test piece firmly so that the longitudinal axis is vertical and in line with the direction of the applied force.

Check that the clamps move in the same plane and parallel to the applied force and that the speed of separation is  $300\text{ mm/min} \pm 30\text{ mm/min}$ .

Reject all test pieces which break within 5 mm of the clamps and carry out sufficient further tests to obtain 5 test pieces which break in the correct manner.

Note the final load at the break.

## 7 Expression of results

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Arrange the 5 readings in ascending order and take the central value (median) as the breaking strength of the adhesive tape under test.

Express the results in newtons per centimetre width of adhesive tape.

Because the results obtained with different tensile testing machines (pendulum or electronic) may be not directly comparable, the type of machine used shall be included in the test report.

## 8 Test report

The test report shall include the following information :

- a) a reference to this European Standard ;
- b) all information necessary to identify the test sample ;
- c) the type of tensile testing machine used ;
- d) the date of the test ;
- e) the result obtained ;
- f) any operation not specified in this European Standard which can influence the results.