SLOVENSKI STANDARD
oSIST prEN ISO 29862:2019

01-februar-2019

Samolepilni trakovi - Določevanje lastnosti prilepljivosti (ISO 29862:2018)

Self adhesive tapes - Determination of peel adhesion properties (ISO 29862:2018)

Klebebänder - Bestimmung der Klebkraft (ISO 29862:2018)

Rubans auto-adhésifs - Détermination des caractéristiques du pouvoir adhésif linéaire (ISO 29862:2018)

Ta slovenski standard je istoveten z: **prEN ISO 29862**

ICS:

83.180	Lepila	Adhesives

oSIST prEN ISO 29862:2019 **en,fr,de**

INTERNATIONAL STANDARD

ISO 29862

Second edition
2018-05

Self adhesive tapes — Determination of peel adhesion properties

Rubans auto-adhésifs — Détermination des caractéristiques du pouvoir adhésif linéaire

Reference number
ISO 29862:2018(E)

COPYRIGHT PROTECTED DOCUMENT

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 11, *Products*.

This second edition cancels and replaces the first edition (ISO 29862:2007) of which it constitutes a minor revision.

The changes compared to the previous edition are as follows:

— the normative references in Clause 2 have been updated;

— definitions have been added in Clause 3 for “self adhesive tape”, “liner” and “double sided adhesive tape”;

— a Bibliography has been added;

— the text has been editorially revised to comply with the most recent editing rules.

Self adhesive tapes — Determination of peel adhesion properties

1 Scope

This document specifies a series of methods for the determination of peel adhesion properties of self adhesives tapes.

This document contains:

— Method 1: Self adhesive tapes – Measurement of peel adhesion from stainless steel at an angle of 180°;

— Method 2: Self adhesive tapes – Measurement of peel adhesion from its own backing at an angle of 180°;

— Method 3: Self adhesive tapes – Measurement of peel adhesion of double sided and transfer tapes at an angle 180°;

— Method 4: Self adhesive tapes – Measurement of adhesion of the liner to an adhesive tape at an angle of 180°.

Annexes A and B specify further variations in the testing protocol according to specific conditions.

A guide to the use of these methods is given in Table 1.

Table 1 — Methods and annexes

Method	Angle of peel	Temperature of test	
		23 °C	Low temperature
Method 1	180°	—	Annex A
Adhesion to steel	90°	Annex B	-
Method 2	180°	—	Annex A
Adhesion to backing	90°	Annex B	—
Method 3	180°	—	Annex A
Adhesion of double sided and transfer tape	90°	Annex B	—
Method 4	180°	—	Annex A
Adhesion of liner	90°	Annex B	-

NOTE 1 These methods provide a means of assessing the uniformity of the adhesion of a given type of self adhesive tape. The assessment may be within a roll of tape, between rolls or between production lots.

NOTE 2 Variations in the tape backing and adhesive affect the response. Therefore these methods cannot be used to pinpoint the specific cause(s) of non uniformity.

NOTE 3 These test methods may not be appropriate to test tapes having either relatively stiff backings, stiff liners or backing showing high stretch at low forces. These characteristics will result in a high variability for the test response which is not a true indication of the real nature of the adhesive bond.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12481, *Self adhesive tapes — Terminology*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12481 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1
peel adhesion
force required to peel a strip of adhesive tape from a specified substrate at a specified angle and speed

3.2
open side
<adhesive> surface of the adhesive on a double sided tape which is exposed on normal unwinding or separation of the first liner

3.3
closed side
<adhesive> surface of the adhesive on a double sided tape which normally remains in contact with the release liner on normal unwinding or separation of the first liner

3.4
transfer tape
adhesive tape having two available pressure sensitive surfaces without the need for a carrier and with a release liner separating the adhesive surfaces. The adhesive may contain reinforcing material

3.5
self adhesive tape
pressure sensitive adhesive
adhesive which in a dry state is permanently tacky at room temperature and adheres readily to surfaces under brief and light pressure

3.6
liner
treated sheet to cover the adhesive temporarily to facilitate handling or unrolling

3.7
double sided adhesive tape
tape where adhesive is applied to both sides of the carrier

4 Significance and use

These test methods are tools for quality control use. Given specific self adhesive tape and a requirement in terms of the minimum or maximum value expected for this tape, the data from the test can be used in conjunction with acceptance criteria.

Test methods 1, 2, 3, and Annexes A and B can show the relative bond strength of a given tape to one or more surfaces (material and texture) as compared to the standard stainless steel panel. Substitution of representative samples of materials in question for the standard steel panel would suffice to do this.

Test methods 1, 2, 3, and Annexes A and B cannot be used to compare two self adhesive tapes of the same type but of different manufacture for their ability to adhere to a surface. This is because the measured peel force is not normalised for a fixed area of stress. The area under stress varies with backing stiffness and adhesive rheology (firmness). Two different tapes seldom agree in these properties.

Test method 4 can show the amount of force required to remove a liner that covers the adhesive side of a tape at a specified peel rate. The force will be different at other peel rates.

These test methods may not provide design information as there is usually no direct relationship between peel adhesion and any functional requirement.

5 Method 1 — Self adhesive tapes — Measurement of peel adhesion from stainless steel at an angle of 180°

5.1 Principle

The method 1 gives a measure of the force required to remove at an angle of 180° an adhesive tape which has been applied to a stainless steel panel.

A length of adhesive tape is applied to a standard plate which is then fixed vertically in one clamp of a tensile testing machine. The other clamp of the machine pulls the free end of the adhesive tape at an angle of 180° to the plate.

The adhesive strength is measured by the force required to peel the adhesive tape continuously from the plate, the line of separation being perpendicular to the direction of the applied force.

5.2 Materials

5.2.1 Absorbent cleaning material, surgical gauze, cotton wool or tissue. To be suitable, materials shall be lint free during use, absorbent, contain no additives that are soluble in the solvents listed in 5.2.2 and made exclusively from virgin materials.

5.2.2 One or more of the following solvents:

— diacetone alcohol non-residual grade (4-hydroxy-4-methyl-2-pentanone);

— methanol;

— methyl ethyl ketone;

— acetone;

— *n*-heptane;

— a mixture of *n*-heptane and a fluorinated hydrocarbon such as refrigerant (suitable when toxicity or flammability restrictions apply).

Solvents shall be of general purpose chemical grade and held in a suitable dispensing system.

5.3 Apparatus

5.3.1 Test piece cutter

An appropriate test piece cutter shall hold two single edge razor blades in parallel planes a precise distance apart, to form a cutter of exact specimen width; two cutters, 12 mm and 24 mm cutting width, shall be available or appropriate alternatives which will not cause edge damage. The precision of the razor blade separation shall be the nominal width ±0,1 mm.

