Adhesives - Peel test for a flexible-bonded-to-rigid test specimen assembly - Part 1: 90º peel

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NATIONAL FOREWORD

See Eesti standard EVS-EN 28510-1:2014 sisaldab Euroopa standardi EN 28510-1:2014 inglisekeelset teksti.	This Estonian standard EVS-EN 28510-1:2014 consists of the English text of the European standard EN 28510-1:2014.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 02.04.2014.	Date of Availability of the European standard is 02.04.2014.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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English Version

Adhesives - Peel test for a flexible-bonded-to-rigid test specimen assembly - Part 1: 90º peel

Adhésifs - Essai de pelage pour un assemblage collé flexible-sur-rigide - Partie 1: Pelage à 90º

Klebstoffe - Schälprüfung für flexibel/starr geklebte Proben - Teil 1: 90° Schälversuch

This European Standard was approved by CEN on 9 February 2014.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 28510-1:2014) 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of an identical text or by endorsement, at the latest by October 2014 and conflicting national standards shall be withdrawn at the latest by October 2014.

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

This document supersedes EN 28510-1:1993.

No technical provisions have been amended in this edition, however the references have been updated.

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.

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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.

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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.

1 Scope

This part of EN 28510 specifies a 90° peel test for the determination, under specified conditions, of the peel resistance of a bonded assembly of two adherends where at least one adherend is flexible. If a normal tensile testing machine is used for the test, the peel angle will not be constant at exactly 90º. If a constant angle of exactly 90° is required, a roller peeling device is used (see 4.1).

The 90º peel test is particularly suitable for use with less flexible adherends for which a 180° peel test is not suitable because the adherends crack, break or delaminate.

A 180º peel test is described in EN ISO 8510-2.

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 13887, *Structural Adhesives - Guidelines for surface preparation of metals and plastics prior to adhesive bonding*

EN ISO 291, *Plastics - Standard atmospheres for conditioning and testing (ISO 291)*

ISO 5725-2, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

3 Principle

A bonded assembly of two adherends is prepared using the adhesive under test. The adherends are then pulled apart at a substantially steady rate, starting at the open end of the bond, in such a way that separation occurs progressively along the length of the bonded adherends. The force is applied approximately normal to the plane of the bond, through the separated part of the flexible adherend.

4 Apparatus

4.1 Tensile testing machine (incorporating a roller peeling device if a constant peel angle of exactly 90º is required), 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 at rupture of the specimen shall lie in the range between 10 % and 80 % of the full-scale reading.

4.2 Grips, one of which shall be suitable for firmly clamping the rigid adherend (see 5.1.2), while the other shall be suitable for holding the flexible adherend (see 5.1.3) as shown in Figure 1. The latter grip shall be self-aligning, so that the force will be exerted normal to the plane of the bond, and linked to the sensor of the tensile testing machine (4.1) by a wire of minimum length 600 mm.

5 Test specimens

5.1 Adherends

5.1.1 General

The adherends shall be thick enough to withstand the expected tensile force, and their dimensions shall be measured accurately and reported in full in the test report.