



SLOVENSKI STANDARD SIST EN 15307:2015

01-marec-2015

Nadomešča:
SIST EN 15307:2009

Lepila za usnjene in obutvene materiale - Vrhni spoji podplata - Minimalne zahteve za trdnost

Adhesives for leather and footwear materials - Sole-upper bonds - Minimum strength requirements

Klebstoffe für Leder und Schuhwerkstoffe - Sohlen-Obermaterial-Klebung - Mindestanforderungen

Adhésifs pour cuir et matériaux de la chaussure - Collages de semelles et matériaux de dessus - Prescriptions minimales

Ta slovenski standard je istoveten z: EN 15307:2014

ICS:

61.060	Obuvala	Footwear
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EUROPEAN STANDARD

EN 15307

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2014

ICS 83.180

Supersedes EN 15307:2007

English Version

Adhesives for leather and footwear materials - Sole-upper bonds - Minimum strength requirements

Colles pour cuir et matériaux de la chaussure - Collages
tige-semelle - Exigences minimales en matière de
résistance

Klebstoffe für Leder und Schuhwerkstoffe - Sohlen-
Obermaterial-Klebungen - Mindestanforderungen

This European Standard was approved by CEN on 23 November 2014.

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.

CEN members are the national standards bodies of 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 United Kingdom.

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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 15307:2014) 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 June 2015, and conflicting national standards shall be withdrawn at the latest by June 2015.

This document supersedes EN 15307:2007.

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.

With respect to the previous version of EN 15307, the following main changes have been made:

1. In order to clarify, the test in 5.2.1 has been reworded as follows:

“The peel resistance after 4 d storage in the standard atmosphere 23/50 according to ISO 554 shall be for sole-upper bonds of:

Class A: at least 2,5 N/mm;

Class B: at least 3,0 N/mm, or at least 2,5 N/mm with material failure;

Class C: at least 4,0 N/mm or at least 3,0 N/mm with material failure;

Class D: at least 5,0 N/mm or at least 3,5 N/mm with material failure.

Definition of “material failure” is included in EN ISO 10365.

2. In order to clarify 5.2.3, the sentence “(separation distance of the bonding)” has been added before the comma.

3. In order to clarify, the test in 6.5 has been reworded as follows:

“Before starting peel tests specified in 6.1 store the test pieces in the standard atmosphere of 23/50 according to ISO 554 for 4 d in case of test described in (5.2.1), for 2 min in case of test described in (5.2.2) and before warming up to (50 ± 2) °C for 6 d in case of test described in (5.2.3).”

4. In Annex A, the full name of the abbreviations NBR, SBR, SBSR and PVC have been added between parentheses in the test.

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.

EN 15307:2014 (E)

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.

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1 Scope

This European Standard defines for four main types of footwear minimum strength requirements for their sole-upper bonds produced with solvent-based or dispersion adhesives under specified conditions.

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 923:2005+A1:2008, *Adhesives - Terms and definitions*

EN 1392, *Adhesives for leather and footwear materials-Solvent-based and dispersion adhesives-Testing of bond strength under specified conditions*

EN 15062, *Adhesives for leather and footwear materials - Solvent-based and dispersion adhesives - Testing ageing of bonds under specified conditions*

EN ISO 868, *Plastics and ebonite - Determination of indentation hardness by means of a durometer (Shore hardness) (ISO 868)*

EN ISO 10365, *Adhesives - Designation of main failure patterns (ISO 10365)*

EN ISO 19952:2005, *Footwear - Vocabulary (ISO 19952:2005)*

ISO 554, *Standard atmospheres for conditioning and/or testing - Specifications*

3 Terms and definitions

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For the purposes of this document, the terms and definitions given in EN 923:2005+A1:2008 and EN ISO 19952:2005 and the following apply.

3.1

leather

tanned animal skin, usually free of hair

3.2

footwear materials

natural and synthetic materials which are suitable for footwear manufacture or repair and have adequate wear properties as upper or sole materials

4 Principle

The surfaces of the leathers or the footwear materials used are treated by a method specific to the type of material. Then strips of specified length and width are cut from the treated materials.

The treated surfaces are bonded by an adhesive to test pieces of specified form.

The test pieces are stored under specified conditions and their bond strength is determined under specified conditions.

EN 15307:2014 (E)**5 Minimum strength requirements****5.1 Classification**

In accordance with practical experience gained the different types of footwear can be classified with regard to the mechanical stress on its sole-upper bonds in use as follows:

Class A: Low stress on sole-upper bonds in use (i.e. infants footwear, indoor footwear, fashion footwear)

Class B: Medium stress on sole-upper bonds in use (i.e. men town footwear, women town footwear, cold weather footwear and casual footwear)

Class C: High stress on sole-upper bonds in use (i.e. children footwear and general sports footwear)

Class D: Very high stress on sole-upper bonds in use (i.e. mountain footwear)

5.2 Specifications**5.2.1 Peel resistance after 4 d at (23 ± 2)°C**

The peel resistance after 4 d storage in the standard atmosphere 23/50 according to ISO 554 shall be for sole-upper bonds of:

Class A: at least 2,5 N/mm

Class B: at least 3,0 N/mm or at least 2,5 N/mm with material failure;

Class C: at least 4,0 N/mm or at least 3,0 N/mm with material failure;

Class D: at least 5,0 N/mm or at least 3,5 N/mm with material failure.

Definition of "material failure" is included in EN ISO 10365.

5.2.2 Initial peel resistance at (23 ± 2) ° C

Regardless of the materials used the initial peel resistance 2 min after assembling shall be at least 1,0 N/mm.

5.2.3 Creep resistance under constant load at (50 ± 2) °C

Regardless of the materials used the creep resistance at a load of 1,5 kg at (50 ± 2) °C for 10 min (separation distance of the bonding), shall be less than 10 mm.

5.2.4 Ageing test

Bonds aged and reconditioned according to EN 15062 shall retain at least 80 % of their initial strength determined in the control test.

In any case, the strength of the aged and reconditioned bonds shall fulfil the minimum requirements specified in 5.2.1, 5.2.2 and 5.2.3.

Occurrence of cohesive substrate failure (CSF) and the value at which it was stated shall be recorded in the test report.

6 Test methods

6.1 Types of tests

6.1.1 Peel tests at (23 ± 2) °C

According to EN 1392.

6.1.2 Peel test at (50 ± 2) °C for 10 min at a constant load of 1,5 kg ("creep test")

According to EN 1392.

6.1.3 Ageing test

According to EN 15062.

6.2 Material identification

The leather(s) or footwear material(s) used under test shall be completely identified by name, manufacturer, date of manufacture/supply, type of leather or footwear material, e.g. soling or upper material. Leathers shall be listed by colour, thickness and type of tannage (if known). Rubber and plastic materials shall be listed by colour, polymer base and Shore-hardness according to EN ISO 868. This identification of materials shall be included in the test report.

Some reference footwear test materials with strictly specified and controlled properties have been developed for research, development and quality certification purposes by European national footwear research institutes (Annex A). If such a reference test material is used, its designation, source and date of supply shall be recorded in the test report.

6.3 Adhesive identification

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The adhesive applied for bonding shall be identified by name, manufacturer, date of manufacture/supply and/or lot number, main polymer, type (solvent-based or dispersion) and colour. For two-part adhesives the nature of the crosslinking agent and the mixing ratio of the components shall be identified. This adhesive identification shall be included in the test report.

Some reference footwear test adhesives with strictly specified and controlled properties have been developed for research, development and quality certification purposes by some European national footwear research institutes (Annex A). If such a reference test adhesive is used, its designation, source and date of supply shall be recorded in the test report.

6.4 Preparation of test pieces

According to EN 1392.

6.5 Storage of test pieces

Before starting peel tests specified in 6.1 store the test pieces in the standard atmosphere 23/50 according to ISO 554 for 4 d (in case of test described in 5.2.1), for 2 min (in case of test described in 5.2.2) and before warming up to (50 ± 2) °C for 6 d (in case of test described in 5.2.3).

6.6 Procedures and evaluation

According to EN 1392.