



# SLOVENSKI STANDARD SIST EN 13523-17:2019

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Nadomešča:  
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**Prevlčene kovine, ki se navijajo - Preskusne metode - 17. del: Oprijemljivost  
zaščitnih folij**

Coil coated metals - Test methods - Part 17: Adhesion of strippable films

Bandbeschichtete Metalle - Prüfverfahren - Teil 17: Haftfestigkeit von abziehbaren Folien

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Tôles prélaquées - Méthodes d'essai - Partie 17 : Adhérence des films pelables

**Ta slovenski standard je istoveten z: EN 13523-17:2019**  
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**ICS:**

25.220.60      Organske prevleke      Organic coatings

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 13523-17**

September 2019

ICS 25.220.60

English Version

## Coil coated metals - Test methods - Part 17: Adhesion of strippable films

Tôles prélaquées - Méthodes d'essai - Partie 17 :  
Adhérence des films pelables

Bandbeschichtete Metalle - Prüfverfahren - Teil 17:  
Haftfestigkeit von abziehbaren Folien

This European Standard was approved by CEN on 1 July 2019.

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.

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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN 13523-17:2019) has been prepared by Technical Committee CEN/TC 139 “Paints and varnishes”, the secretariat of which is held by DIN.

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 March 2020, and conflicting national standards shall be withdrawn at the latest by March 2020.

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

This document supersedes EN 13523-17:2011.

The main changes compared to EN 13523-17:2011 are:

- a) in 8.2.1 and 8.2.2 tolerances have been added to the area for leaving the film;
- b) the text has been editorially revised and the normative references have been updated.

The EN 13523 series, *Coil coated metals — Test methods*, consists of the following parts:

- *Part 0: General introduction*
- *Part 1: Film thickness*
- *Part 2: Gloss*
- *Part 3: Colour difference — Instrumental comparison*
- *Part 4: Pencil hardness*
- *Part 5: Resistance to rapid deformation (impact test)*
- *Part 6: Adhesion after indentation (cupping test)*
- *Part 7: Resistance to cracking on bending (T-bend test)*
- *Part 8: Resistance to salt spray (fog)*
- *Part 9: Resistance to water immersion*
- *Part 10: Resistance to fluorescent UV radiation and water condensation*
- *Part 11: Resistance to solvents (rubbing test)*
- *Part 12: Resistance to scratching*
- *Part 13: Resistance to accelerated ageing by the use of heat*
- *Part 14: Chalking (Helmen method)*
- *Part 15: Metamerism*

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**EN 13523-17:2019 (E)**

- *Part 16: Resistance to abrasion*
- *Part 17: Adhesion of strippable films*
- *Part 18: Resistance to staining*
- *Part 19: Panel design and method of atmospheric exposure testing*
- *Part 20: Foam adhesion*
- *Part 21: Evaluation of outdoor exposed panels*
- *Part 22: Colour difference — Visual comparison*
- *Part 23: Resistance to humid atmospheres containing sulfur dioxide*
- *Part 24: Resistance to blocking and pressure marking*
- *Part 25: Resistance to humidity*
- *Part 26: Resistance to condensation of water*
- *Part 27: Resistance to humid poultice (Cataplasm test)*
- *Part 29: Resistance to environmental soiling (Dirt pick-up and striping)*

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According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## 1 Scope

This part of the EN 13523 series specifies two methods for determining the numerical evaluation of the adhesion of strippable films which have previously been applied to an organic coating on a metallic substrate.

Samples can be tested irrespective of whether the strippable film has been applied in the laboratory or on the production line.

NOTE Method 1 is preferred for films with adhesive and method 2 for films without adhesive.

## 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 13523-0, *Coil coated metals — Test methods — Part 0: General introduction*

EN 23270, *Paints and varnishes and their raw materials — Temperatures and humidities for conditioning and testing (ISO 3270)*

## 3 Terms and definitions

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For the purposes of this document, the terms and definitions given in EN 13523-0 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 <http://www.iso.org/obp>

### 3.1

#### strippable film

plastics film applied to the coated surface in order to afford a temporary protection against mechanical damage

Note 1 to entry: Strippable film is also referred to as protection foil.

## 4 Principle

The force necessary to peel a film of fixed width from the surface of a coil coated material, at a defined angle and speed, is determined using appropriate instruments.

## EN 13523-17:2019 (E)

### 5 Apparatus

#### 5.1 For method 1

##### 5.1.1 Hydraulic or electronic dynamometer with:

- a movable jaw speed of  $(300 \pm 30)$  mm/min;
- a measuring scale usually reading from 0 N to 10 N;
- a traction meter set so that the force required to strip the film lies between 15 % and 85 % of the measuring scale.

##### 5.1.2 Cutting tool (e.g. a sharp knife).

##### 5.1.3 Ruler.

#### 5.2 For method 2

##### 5.2.1 Spring balance (cylinder dynamometer) with a scale of up to 10 N.

##### 5.2.2 Cutting tool (e.g. a sharp knife).

##### 5.2.3 Ruler.

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### 6 Sampling

Shall be in accordance with EN 13523-0.

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### 7 Test panels

Shall be in accordance with EN 13523-0.

### 8 Procedure

#### 8.1 Panel preparation

##### 8.1.1 Self-adhesive strippable film

When self-adhesive strippable film is applied in the laboratory, observe the following requirements:

- a) Store the roll of film before use for a minimum of 24 h at ambient temperature and humidity. For more accurate measurements, as required for instance in case of dispute, the temperature shall be  $(23 \pm 2)$  °C and relative humidity  $(50 \pm 5)$  %, in accordance with EN 23270. Apply the film under these conditions.
- b) Apply the film to the surface of the test samples immediately after it has been uncoiled from the roll; take every care to avoid folds and blisters; press the film into place in the first instance by finger-tip pressure only.



- c) Use a cylindrical metal roller, rubber-covered to approximately 80 ° Shore, with a minimum diameter of 50 mm and a pressure of 2,0 N/mm width to press down the film, the metal roller being made to travel twice in a longitudinal direction over and back across the film surface; speed of travel shall be as close as practicable to 10 mm/s; no additional pressure shall be exerted on the test panel surface.

Measure adhesion values ( $10 \pm 1$ ) min after the film has been applied.

Measure the adhesion of the strippable film at ambient conditions. For more accurate measurements, as required for instance in case of dispute, the temperature shall be ( $23 \pm 2$ ) °C and relative humidity ( $50 \pm 5$ ) % in accordance with EN 23270.

### 8.1.2 Non-adhesive strippable film

When non-adhesive strippable film is applied in the laboratory, heat the substrate before application to a temperature specified by the film supplier.

After application of the strippable film, cool down the sample in a way as close as possible to the production line conditions.

## 8.2 Determination

### 8.2.1 Method 1

Prepare five samples of dimensions 200 mm × 60 mm. The 200 mm edge should be cut in the rolling direction (see 1 in Figure 1).

Cut through the strippable film with a cutting tool approximately 10 mm from each long edge and along the full length of each panel. Remove the film along both edges leaving ( $40 \pm 1$ ) mm of film along the centre of the samples.

Make five reference marks on each long edge of the samples at intervals of 30 mm, the first 50 mm from one end (end *c*). The marks shall be 5 mm long, neither touching nor damaging the film (see Figure 1).

Detach by hand not more than 25 mm of film from end *c* perpendicular to the surface of the sample.

Clamp the bared end (*c*) of the sample in one jaw of the dynamometer.

Fold the detached film back by 180 degrees and clamp in the other jaw so that the film surfaces are accurately aligned without touching.

Start the dynamometer at a speed of ( $300 \pm 30$ ) mm/min ensuring that the removed film moves parallel to, and does not touch, the film remaining on the sample (no friction between film surfaces).

As the point of contact between film and sample reaches a reference point, the force indicated on the dynamometer scale shall be recorded.

Carry out the test on all five samples.