



**SLOVENSKI STANDARD**  
**SIST EN 13523-27:2009**

**01-oktober-2009**

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Previdljivi prevleki - Metode preizkušanja - Del 27: Odpornost na vlažno pultico (Kataplazma-test)

Coil coated metals - Test methods - Part 27: Resistance to humid poultice (Cataplasm test)

Bandbeschichtete Metalle - Prüfverfahren - Teil 27: Beständigkeit gegen feuchte Verpackung (Kataplasm-Test)

Tôles prélaquées - Méthodes d'essai -Partie 27: Résistance a la corrosion sous cataplasme (essai au cataplasme)

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**Ta slovenski standard je istoveten z: EN 13523-27:2009**

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**ICS:**

25.220.60      Organske prevleke      Organic coatings

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 13523-27**

July 2009

ICS 25.220.60

English Version

## Coil coated metals - Test methods - Part 27: Resistance to humid poultice (Cataplasma test)

Tôles prélaquées - Méthodes d'essai -Partie 27: Résistance à la corrosion sous cataplasme (essai au cataplasme)

Bandbeschichtete Metalle - Prüfverfahren - Teil 27: Beständigkeit gegen feuchte Verpackung (Kataplasma-Test)

This European Standard was approved by CEN on 3 July 2009.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This document (EN 13523-27:2009) 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 January 2010, and conflicting national standards shall be withdrawn at the latest by January 2010.

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.

The European Standard EN 13523, *Coil coated metals – Test methods* consists of the following parts:

- *Part 0: General introduction and list of test methods;*
- *Part 1: Coating thickness;*
- *Part 2: Specular 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 light 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;*
- *Part 16: Resistance to abrasion;*
- *Part 17: Adhesion of strippable films;*
- *Part 18: Resistance to staining;*

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- *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: Colour stability in 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).*

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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## 1 Scope

This part of EN 13523 specifies a procedure for evaluating the resistance of an organic coating on a metallic substrate (coil coating) to conditions of extreme humidity (acid, alkaline and/or neutral).

## 2 Normative references

The following referenced documents are indispensable for the application 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 13523-0:2001, *Coil coated metals – Test methods – Part 0: General introduction and list of test methods*

EN ISO 4628-2, *Paints and varnishes – Evaluation of degradation of coatings – Designation of quantity and size of defects, and of intensity of uniform changes in appearance – Part 2: Assessment of degree of blistering (ISO 4628-2:2003)*

EN ISO 4628-3, *Paints and varnishes – Evaluation of degradation of coatings – Designation of quantity and size of defects, and of intensity of uniform changes in appearance – Part 3: Assessment of degree of rusting (ISO 4628-3:2003)*

EN ISO 4628-5, *Paints and varnishes – Evaluation of degradation of coatings – Designation of quantity and size of defects, and of intensity of uniform changes in appearance – Part 5: Assessment of degree of flaking (ISO 4628-5:2003)*

EN ISO 4628-10, *Paints and varnishes – Evaluation of degradation of coatings – Designation of quantity and size of defects, and of intensity of uniform changes in appearance – Part 10: Assessment of degree of filiform corrosion (ISO 4628-10:2003)*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13523-0:2001 apply.

## 4 Principle

A test specimen is exposed to an enclosed humid environment for a pre-determined time, at a specified temperature. The test panel is evaluated for any uniform or local change such as blistering or corrosion (e.g. red rust, white rust).

## 5 Apparatus and materials

**5.1 Purified absorbent cotton-wool**, single layer, of rectangular shape of about 250 mm × 650 mm and weighing  $(22,5 \pm 2,5)$  g.

**5.2 Heat resistant and thermally sealable waterproof plastics bag** and the relevant sealing equipment.

The plastics bag can be made of polyethylene, for example, and should be at least 0,22 mm thick.

**5.3 Specific solution.**

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- For a neutral humid environment, deionised water with an electrical conductivity less than 0,5 mS/m (see also EN ISO 3696);
- for an acid humid environment, a standard buffer solution of pH 4;
- for an alkaline humid environment, a standard buffer solution of pH 9.

If necessary, the composition of the standard buffer solutions can be agreed prior to testing.

5.4 **Oven**, capable of maintaining a temperature of  $(70 \pm 3) ^\circ\text{C}$ .

## 6 Sample preparation

Four test specimens, typically 75 mm × 150 mm, are necessary for the material under test in each humid environment. They shall be flat and free from contamination. Sampling shall be performed according to EN 13523-0. If not otherwise specified, the edges of exposed panels shall be sheared with the burrs away from the test surface.

Wrap the test specimens in the cotton-wool as follows:

Place the first two test specimens on the cotton-wool, with the test surface facing down (see Figure 1):



### Key

- 1 Test specimens
- 2 Cotton-wool

Figure 1 — 1<sup>st</sup> layer

Fold the cotton-wool and place the last two test specimens, with the test surface facing up (see Figure 2):

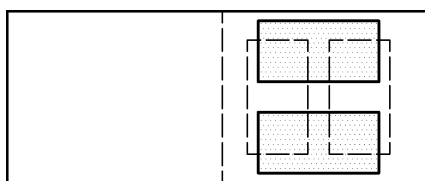
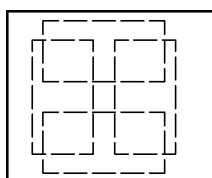
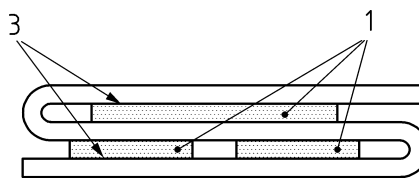


Figure 2 — 2<sup>nd</sup> layer

Fold the cotton-wool over the last test specimens (see Figure 3):



a) Top view



b) Side view

### Key

- 1 Test specimens
- 3 Coating to be tested

Figure 3 — 3<sup>rd</sup> layer



Place the test specimens wrapped in the cotton-wool in the plastics bag and add  $(270 \pm 5)$  g (i.e.  $12 \times$  the mass of the cotton wool) of the solution (5.3). Carefully flatten the bag manually and seal it thermally in order to minimize losses.

## 7 Procedure

### 7.1 Exposure

Pre-heat the oven to  $(70 \pm 3)$  °C. Place the plastics bag with specimens horizontally inside the oven. Maintain the oven temperature at  $(70 \pm 3)$  °C for the duration of the test (7 or 14 days, as agreed or specified), during which time the bag shall not be opened.

### 7.2 Evaluation

Remove the bag from the oven and allow it to cool down to ambient temperature. Once cooled, open the bag as soon as possible. Remove the specimens and wipe away surface moisture with a soft tissue. Evaluate the specimens without further delay.

## 8 Expression of results

### 8.1 Overall surface (flat test surface)

Inspect the overall surface for blistering in accordance with EN ISO 4628-2.

### 8.2 Edges

Describe and measure the type of defect (blistering, white or red rust, flaking, filiform corrosion) in accordance with EN ISO 4628-2, EN ISO 4628-3, EN ISO 4628-5 and EN ISO 4628-10.

## 9 Test report

The test report shall contain at least the following information:

- a) all details necessary to identify the product tested;
- b) reference to this part of EN 13523, i.e. EN 13523-27;
- c) applied test conditions (composition of standard buffer solutions);
- d) test duration;
- e) results of the test, as indicated in clause 8;
- f) any deviation from the test procedure described;
- g) date of the test.